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TREATMENT OF PNEUMONIA WITH PARTIALLY AUTOLYZED PNEUMOCOCCI *

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Rosenow has shown that when virulent pneumococci are suspended in physiologic salt solution the substance or substances on which their resistance to phagocytosis and virulence depend pass into solution.[1] The soluble part or "virulin" at a certain stage of autolysis is highly toxic and has little immunizing action, while the insoluble remnants have well-marked antigenic properties and practically no toxic effects. The soluble toxic part has been found to interfere with the formation of antibodies following injections of the non-toxic insoluble remnants. The protective value against experimental pneumococcus infections of detoxicated pneumococci has been found to be greater than that of heat-killed pneumococci.[2] For these reasons it seemed advisable to determine, if possible, whether or not the injection of virulent pneumococci, from which the readily soluble and toxic parts have been removed, would have any influence on the course and death-rate of lobar pneumonia.

PREPARATION OF ANTIGENS

The antigens or vaccines used during the winter of 1911, eight in all, were prepared from twenty-four-hour cultures of highly virulent pneumococci grown chiefly in ascites-dextrose broth. The broth was prepared from meat infusion, rendered sugar free, and then 0.2 per cent. dextrose was added and ascites fluid in the proportion of one part in ten. After centrifugation the pneumococci were suspended in 0.5 per cent. phenol in sodium chlorid solution and placed at 37 C. (98.6 F.) for twenty-four hours. This was repeated once or twice, until practically all the organisms had become Gram-negative and eosinophilous. Three of the antigens were prepared in the same way from the washed pneumococci which had grown in the peritoneal cavity of guinea-pigs. The antigens used during 1912 and 1913 were prepared from a large number of strains of highly virulent pneumococci which had grown both in the peritoneal cavity of guinea-pigs and in ascites-dextrose broth. The growth equivalent to that of approximately 150 c.c. of broth was suspended in 30 c.c. sodium chlorid solution at 37 C. under ether. In the case of the antigen used in 1912 the cocci were removed by centrifugation at the end of forty-eight hours and resuspended in sodium chlorid solution under ether. This was repeated twice. The disintegration was then marked and all the cocci had become Gram-negative. The antigen used during the winter of 1913 was prepared by suspending the pneumococci in sodium chlorid solution under ether at 37 C. until 7 c.c. of the suspension were no longer toxic for guinea-pigs when injected intravenously; that is, for about seventy-two hours. The organisms at this time had nearly all become Gram-negative. The sterility of the final product was determined by making both aerobic and anaerobic cultures on blood-agar. Some care must be exercised not to carry the process too far, because then all antigenic powers may be lost; experiments indicate that the best time to interrupt the lysis is when almost all the cocci have lost their affinity for the Gram stain. Standardized suspensions are used from the beginning of the extraction, and the final suspension represents about 20 billion pneumococci per cubic centimeter. This is kept in the ice-chest.

The dose used during the winter of 1911 varied from 10 to 20 billion. The injections were given subcutaneously daily until the temperature reached normal. During the second period, 1912, only one injection of approximately 20 billion was given as soon as the diagnosis was established, while during the past winter from 10 to 15 billion were given daily until the temperature reached normal. Only slight tenderness follows the injection and there is little local and no general reaction noticeable.

THE TREATMENT OF CASES

The cases treated may be considered in three classes: the cases treated outside of the hospital, the uncontrolled cases in the hospital and those controlled by alternate untreated cases.

The results in the thirty cases occurring in the practice of physicians outside of the hospital were better than those obtained in the more unfavorable cases in the hospital. Of the 30 patients, three died. One of these showed a large number of influenza bacilli in the sputum, together with pneumococci and streptococci; the second patient had a high grade of emphysema, due to a bronchial asthma of long standing, and the third death occurred in an alcoholic aged 58 who had a chronic myocarditis. Injections were begun in the fatal cases on the fifth, second and fifth day, respectively; in the patients who recovered, on the first or second day in seven, on the third day in eight, on the fourth day in five and on the fifth, sixth and seventh days in six; while in four cases the exact time of onset could not be ascertained. The ages ranged from 19 to 58 years. The results as determined by observation at the bedside when the treatment was begun within forty-eight hours of the onset often

* From the Memorial Institute for Infectious Diseases, Chicago.

1. Rosenow, E. C.: Human Pneumococcal Opsonin and Antiopsonic Substance in Virulent Pneumococci, Jour. Infect. Dis., 1907, iv, 285; abstr., THE JOURNAL A. M. A., July 6, 1907, p. 87. Tchistovitch and Yourevitch (Ann. de l'Inst. Pasteur, 1908, xxii, 611) made the same discovery.

2. See preliminary note by Rosenow, E. C.: Autolysis of Pneumococci and the Effect of the Injection of Autolyzed Pneumococci, THE JOURNAL A. M. A., June 11, 1910, p. 1943; Immunization in Pneumococcus Infections, Sept. 7, 1912, p. 795; Mechanism of Intoxication in Pneumococcus Anaphylaxis and in Pneumococcus Infections, Tr. Fifteenth Internat. Cong. Hyg. and Demog., 1912, ii, 338.

seemed striking: there was usually a rise of about a degree in temperature in a few hours, then the temperature would usually drop markedly, to remain one or two degrees lower the following day, and if now the injection was repeated, a normal temperature was often reached in three, four or five days after the onset. When the injections were given in three or four days after the onset the beneficial effect was less evident, while if begun still later there was no apparent improvement. Harmful effects have not been observed in any of the cases.

The second group, consisting of thirty-five cases, occurred in the Cook County Hospital during November and December, 1910. They were treated in the same manner as the cases just mentioned. Nine of these patients died, a death-rate of 25.7 per cent. The injections in the fatal cases were begun on the second day in only one case, on the third day in two, and in the remaining on the fourth, fifth and sixth days. One of these cases was found to be streptococcus pneumonia, in the other pneumonia developed during puerperal sepsis, and one patient had delirium tremens. Three others were bad alcoholics. The treatment in the cases with recovery was begun on the second day in two, on the third in three, on the fourth in three, and on the fifth, sixth, seventh and eighth days in the rest. The ages in this group ranged between 18 and 70 years.

We come now to the consideration of the third and largest group. The good effect of the early injections often seemed convincing, but because pneumonia is so variable in its course some sort of control is desirable. In order to do this most effectively we used the statistical method. Every second pneumonia patient in the order admitted to the Cook County Hospital of Chicago during January, February and March of 1911, 1912 and 1913, the height of each pneumonia season, was injected subcutaneously with detoxicated pneumococci at the same time as he received the usual routine treatment given to all patients with pneumonia, which was not modified in any way whatsoever. There was no selection practiced at all—every second pneumonia patient was injected, the uninjected serving as the control group. We are deeply indebted to the physicians of the hospital for their willing cooperation and encouragement. Altogether there are 294 cases for consideration in this group, 146 receiving the injections and 148 constituting the controls. Of the control group fifty-six died, a death-rate of 37.8 per cent. Of the injected group thirty-four died, a death-rate of 23.3 per cent., a total lowering of the death-rate of 14.5 per cent. in the injected group.

TABLE 1.—DEATH-RATE IN THE TREATED AND UNTREATED PNEUMONIA CASES BY YEARS

Year	Treated			Untreated		
	Total No.	No. Died	Death-Rate	Total No.	No. Died	Death-Rate
1911	51	16	31%	50	25	50%
1912	46	11	24%	48	15	31.2%
1913	49	7	14.3%	50	16	32%

Table 1 shows that the mortality-rate was lower in the injected than in the uninjected or control cases during each of the three pneumonia seasons. The unfavorable class of cases that we are dealing with is well illustrated by the very high death-rate of the control cases. It should be said at this time that the death-rate from pneumonia in Cook County Hospital is always very high because most of the pneumonia patients are of the least favorably situated class, hygienically and economically, of the whole adult male population of Chicago, many of them using alcohol excessively.

In Table 2 the death-rate is given by decennial periods. It shows a consistently lower death-rate in the injected cases than in the uninjected cases in each period except between the ages of 61 and 70 years. Here the mortality is slightly higher in the treated cases; but only four were treated with two deaths, whereas in the controls there were eleven cases with five deaths.

TABLE 2.—ANALYSIS OF THE RESULTS BY AGE-PERIODS

Decennial Periods	Treated			Untreated		
	Total No.	No. Died	Death-Rate	Total No.	No. Died	Death-Rate
1-20	21	0	0 %	17	2	11.4 %
21-30	39	7	18 %	36	8	22.2 %
31-40	43	11	25.5%	34	14	41.1 %
41-50	25	8	32 %	32	14	43.7 %
51-60	14	6	42.8%	18	13	72 %
61-70	4	2	50 %	11	5	45.45%
	146	34	23.3%	148	56	37.8 %

The incidence of complications and sequelae seems about the same in both groups, and the attack terminated by crisis of those that recovered in 71 per cent. of the injected and in 65 per cent. of the uninjected group. There is a tendency to earlier crisis in the injected group, especially in the cases in which there was a chance to begin the injections early. Thus during 1911 and 1913 when this point was studied, the injections were begun on the first or second day in all but two of the twenty-one cases in which crisis occurred on the sixth day or earlier.

Further analysis of the cases shows that the average age of the injected patients is 34 years while that for the uninjected patients is 36 years. The average age of the injected patients who died is 42.3 years, that of the uninjected patients who died is 42.9.

According to the facts obtained there were seventy-two bad alcoholics in the uninjected group and of these twenty died; there were seventy-three bad alcoholics in the injected group and of these twenty-six died.

The average duration of illness before entrance to the hospital in the control group is 4.3 days; of the control fatal cases 4.4 days; of the injected cases 3.9 days, and of the injected fatal cases 4.3 days. The first injection in nearly all cases was given the day after admission. This makes the average time of the first injection about the fifth day of the disease—necessarily a disadvantage in any form of treatment of pneumonia and particularly for the one under consideration.

CONCLUSIONS

In view of the fact that the mortality is consistently lower in the injected cases each year, that the average time of the first injection was late (approximately the fifth day), and that the type of cases treated is of the worst kind, nearly one-half of the patients being bad alcoholics, the conclusion that this method of treatment of pneumonia is of value seems warranted.

The results obtained in the series outside of the hospital, in which the injections were begun earlier, indicate that by the early administration of the antigen better results can be secured. Further observations require the cooperation of physicians who are in position to give the injections at the earliest moment.[3]

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3. The antigen or vaccine is kept on hand and it will be sent free on application to physicians who are willing to send us records of the cases.

ENTERICOID FEVER—FEBRIS ENTERICOIDES *

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During the last few years I have seen a number of cases of continued fever that resembled typhoid fever but did not give the usual laboratory tests nor did they present all of the characteristic clinical features of that disease. In their symptomatology they did not, however, depart from the text-book description more than many well authenticated cases of typhoid fever. I am sure that every physician in active practice sees cases of fever that impress him in the beginning as typhoid, and if he commits himself to this diagnosis he is often much embarrassed to find that the duration is too short for it to be typhoid fever or that the case does not give the laboratory reactions of that disease. I am, of course, not referring to certain widely different infections that may assume a typhoid type, such as ulcerative endocarditis, miliary and caseous tuberculosis, meningitis, etc.

One of these typhoid-like infections has already been established as a clinical entity, namely paratyphoid fever. But it has seemed to me from observation and a perusal of some recent literature that in addition to paratyphoid fever there are other febrile affections that at present are either included under the head of typhoid fever or are as yet "without a local habitation and a name." The recognition of paratyphoid fever has come as a welcome escape from a perplexing dilemma, for it helps to explain a number of otherwise puzzling facts. It explains the occurrence of second attacks of typhoid fever. Most of the literature on this subject antedates the discovery of the paratyphoid bacillus. Inasmuch as typhoid fever does not protect against paratyphoid fever, a person may have the two diseases at different times. The observer not familiar with the facts and not making the differential clinical tests takes it for granted that the two attacks are both typhoid fever. I would, of course, not deny the possibility of typhoid recurrence, but I believe that the newer studies will show its great infrequency. Another disturbing factor for which we now have a fairly satisfactory explanation is the observation that a goodly proportion of persons vaccinated against typhoid fever later developed a typhoid-like infection. Without careful laboratory study the inference would have been drawn that vaccination against typhoid was not as completely protective as its advocates had claimed. But when it is found that the disease attacking the vaccinated persons is not typhoid but paratyphoid fever, then our confidence in vaccination returns, though it is chastened by the thought that its protection is too specific and too limited. Hence we must approve the suggestion of Colonel Firth[1] that vaccination in the future should be done both against typhoid and against paratyphoid fever. I may add, however, that I have seen two cases in which, despite antityphoid vaccination made *secundum artem*, a febrile disease developed three months later which by the ordinary clinical and laboratory tests seemed to be true typhoid. One of the cases[2] ended fatally and at necropsy typhoid ulcers were found.

Through an unusual coincidence I had under observation during the past summer (1912) four cases of continued fever that, while resembling typhoid fever most closely, could not with justice be so designated.

CASE 1.—S. M., a married woman, aged 40, a native of England, residence Telford, Pa., was admitted to the Jewish Hospital on Aug. 17, 1912, complaining of headache from which she had been suffering for three weeks. In the beginning she had had chills for two days and a little nausea. Twelve years before she had had an attack of typhoid fever and had been treated for it in a hospital in Philadelphia. Up to three weeks before admission she had been obtaining her drinking-water from a well on the farm, but changed then to town water because the well-water was beginning to have an offensive odor. Her temperature was somewhat irregular, ranging between 99 and 102 F. with occasional drops to below normal. The fever persisted from her admission on August 17 until September 16, exactly thirty days, and as she had been ill two weeks prior to admission her disease lasted altogether six weeks. Throughout her stay in the hospital the patient made no complaint. She had no diarrhea, no delirium, no rose spots, or palpable spleen. The Widal and diazo reactions were negative. The leukocytes were 5,400; the red cells 4,320,000; the hemoglobin 75 per cent. Recovery was complete.

CASE 2.—G. H., a lawyer, single, aged 41, brother of a physician, entered the Jewish Hospital Sept. 5, 1912, having been ill a week. Nine years previously he had had an attack of typhoid fever lasting three months. Physical examination was entirely negative. There was no enlargement of the spleen, no roseola. The leukocytes numbered 7,400. The Widal test and blood-culture gave negative results. The temperature remained elevated for ten days after admission, reaching 102 F. as its highest. Decline was by lysis.

CASE 3.—M. R., a single woman, aged 57, a seamstress by occupation, was admitted to the Jewish Hospital on Sept. 7, 1912, with a history of having been ill five weeks with fever, diarrhea and occasional vomiting. In July, 1911, she had, according to her statement, an attack of typhoid fever. The house in which she had lived had very bad drainage. Physical examination showed a few doubtful rose spots; the spleen was not demonstrably enlarged; at both pulmonary bases fine crackling râles could be heard. A curious feature was the presence of a pulse of the water-hammer type without any manifest aortic insufficiency. The temperature oscillated considerably, rarely sinking to normal and reaching as its highest point 104 F. It declined gradually and became normal on September 20, exactly two weeks after admission. If these two weeks are added to the five she was ill before coming to the hospital, there is a total duration of seven weeks. The blood showed 5,400 leukocytes. The Widal reaction was negative on September 9 and positive on September 29. The blood-culture was negative and a culture of the feces showed the colon bacillus and a staphylococcus. A culture of the urine was made but unfortunately became contaminated.

CASE 4.—M. J., aged 23, is the wife of a surgeon in the United State Navy. Her medical history is interesting. Wherever she has lived, and she has lived in many places, she seems to have fallen a victim to the indigenous disease. At the age of 8, while residing at Fort Myer, she had an attack of dysentery, another while in Cuba, and a third while in the Philippine Islands. In the last place she also had two attacks of dengue. In January of this year (1912) she received a series of three injections of typhoid vaccine.[3] In July she had an operation for dilatation and curettement. She was taken ill on August 1 with general malaise and headache. On August 8 she got a thorough wetting which was followed by headache and severe pains throughout the body. She entered the university hospital on August 15, with a temperature of 104 F. When I saw her for the first time, she was bright and alert,

* Read before the Section in Medicine of the College of Physicians of Philadelphia, Oct. 28, 1912.

1. Firth: Jour. Roy. Army Med. Corps, 1912, No. 19, p. 157.

2. Since the foregoing was written the organism isolated from the fatal case has been carefully studied by Dr. K. F. Meyer, of the State Livestock Sanitary Board, with the most interesting result that, though belonging to the typhoid group, it proved to be neither the ordinary typhoid nor the paratyphoid bacillus.

3. According to Colonel Firth, Major Russell, Spooner, and others, the antityphoid vaccination protects for at least thirty months.

but preferred to keep her eyes covered with a folded handkerchief. Her face was flushed and around the eyes there was a bright ring of erythema. Heart and lungs presented nothing abnormal. The spleen was not palpable. Over the legs there were numerous crusts, the remains of an eruption of dermatitis herpetiformis, from attacks of which the patient had suffered for many years. There was considerable cough with scanty expectoration, in which some micro-organisms in chains and short encapsulated Gram-negative and also Gram-positive diplococci were found. Tubercle bacilli were not present. The leukocytes were 7,700, with a normal differential count. The urine gave doubtful diazo reaction. The Widal test was negative in the beginning, doubtful on August 19, negative on August 29 and on September 2. On September 2 the patient had two chills a half-hour apart without sweats, headache or nausea. The next day the leukocytes were 16,600. Blood-culture gave negative results and two examinations of the stools for typhoid bacilli were likewise negative, only the *Bacillus pyocyaneus* and the colon bacillus being found. All tests for the paratyphoid organism were also negative. Eighteen days after admission, or nearly five weeks after the beginning of the illness, a few rose-colored spots appeared on the abdomen. The temperature throughout was somewhat irregular—from 101 to 104 F. during the first week, afterward between 99 and 101 F., then again between 101 and 104 F. It reached normal September 14, exactly thirty days after the patient's entrance into the hospital.

REMARKS

I think I can say quite definitely that the disease in these four patients was not typhoid fever, although for want of a better name it was so entered in the hospital records. As to the possibility of its having been paratyphoid fever, there is no clear evidence either one way or the other in the first three, while in the fourth all the known tests for paratyphoid fever proved negative. The etiology thus remains obscure; and so it will remain in many other cases of like nature until we have more accurate diagnostic tests. Progress will be made in this confused field as soon as the fact is recognized that there are organisms allied to the typhoid bacillus that are capable of producing typhoid-like febrile diseases. By means of cultural and serologic tests it is now comparatively easy to separate from typhoid fever a disease formerly confounded with it called paratyphoid fever, but further refinement of our biologic methods will, I am sure, reveal still other types of infection. Even now it is possible to separate paratyphoid fever into two subvarieties, one due to the paratyphoid bacillus A, an organism closely allied to the true typhoid bacillus, and one due to the so-called paratyphoid bacillus B.[4]

The typhoid bacillus is almost exclusively a human parasite. This is also true of the *Bacillus paratyphosus* A. The paratyphoid bacillus B, on the other hand, has a wide distribution in the lower animals, especially in those serving for human food. While generally a harmless saprophyte, it may, like the human colon bacillus, become pathogenic under certain conditions, causing various forms of animal diseases. The meat of such animals may then in turn be harmful to man. I believe that this form of food infection is at the bottom of many obscure cases that at the present time either cannot be classified or are wrongly designated as typhoid fever.

Two principal types of organisms have been found as the cause of food poisoning—the Gärtner type (type of the *Bacillus enteritidis Gärtner*) and the paratyphoid B type. Both of these are represented in nature by many subspecies. They are found in the flesh of diseased animals, but some, especially the paratyphoid B group, also in animals that are apparently well. Moreover, the meat of healthy animals may in the slaughter-house or in the butcher-shop become contaminated through contact with parts of diseased animals. Among the meats used for food, veal seems to be the chief purveyor of infection, but many meat products, poultry—especially goose—fish, lobster, oysters, milk, eggs and cheese may carry the germs.[5]

Much interest attaches to the *Bacillus suipestifer*, a common pathogenic parasite of hogs. It is erroneously called the bacillus of hog cholera; the latter disease is due to an invisible virus with which the bacillus seems always to be closely associated. On account of its ubiquity, the *Bacillus suipestifer* is an important organism, though the exact rôle it plays in human pathology, if it plays any, is still unknown. Morphologically, it is indistinguishable from the paratyphoid bacillus.

Another interesting though little understood point in the epidemiology of this group of infections is the existence of typhoid-like organisms in animals not used for slaughter, such as mice, rats, parrots, canary birds, rabbits and guinea-pigs. Loeffler, in a very fatal epizootic among mice characterized by gastro-enteritis, isolated an organism, the *Bacillus typhi murium*, that is virtually identical with the paratyphoid organism. Nocard, in parrots dying of an epidemic enteritis, found the so-called psittacosis bacillus, which likewise has nearly all the characteristics of the paratyphoid bacillus B. Cases of transmission[6] of the psittacosis bacillus from parrots to human beings have been reported from France and Germany. Another organism not distinguishable from the paratyphoid bacillus was found by Mori in cats dying of acute enteritis. Since animal parasites may easily be conveyed from the lower animals to man, it is not surprising that bacterial infection from one to the other, even when the animals are not used for slaughter, also readily occurs. It is probable that infection is brought about more often through meat and other animal food products than through the medium of domestic pets and rodents. In obscure cases, however, all those possible sources should be taken into consideration.

The symptoms of infection naturally vary widely depending on the virulence of the organism and the susceptibility of the host. Some of the toxins of the paratyphoid group are exceedingly powerful, causing a prompt and violent toxic gastro-enteritis. As they are thermostabile the cooking process does not lessen their toxicity. Many cases of so-called ptomain poisoning and cholera morbus probably have such an origin.

Instead of causing a pronounced local inflammation, the organisms may bring about a general disease in which the local manifestations are but of slight moment. This is the typhoid type of the infection and the one that causes most of the diagnostic difficulties. The disease may last a short time or may be prolonged for weeks. Many and varied are the diagnoses made in protracted cases. Relapses are rarer in paratyphoid forms than in true typhoid fever.

I thought it would be convenient, even though it might not help to clarify the subject, if there were a term to designate all the diseases that resemble but are not true typhoid fever and that are due to micro-organisms

4. For unknown reasons the majority of cases of paratyphoid in Germany seem to be due to the paratyphosus B, while in this country and in India the paratyphosus A plays the major rôle.

5. It may not be amiss to say that sausage-poisoning is due to a wholly different cause, namely, to an anaerobic bacterium—the *Bacillus botulinus*. The symptoms produced by this organism resemble those of atropin-poisoning.

6. Drewes reports an interesting case in which a woman who had bought a parrot fell ill of a typhoid-like affection. On investigation it was discovered that the saleswoman from whom she had purchased the parrot was a paratyphoid carrier.

of the large paratyphoid family. As the word "typhoidoid," though expressive is not euphonious, I avail myself of the suggestion made by Dr. H. A. Hare in discussing this paper and propose the name "entericoid" fevers. Up to the present paratyphoid is the best known of the entericoid fevers. In time, as I have intimated, we shall learn to distinguish others—by agglutination and absorption tests,[7] by cultural methods, particularly culture on sugar mediums, and by animal inoculation.

The knowledge that there are many other modes of infection aside from those known to convey typhoid fever —that meat and meat products, poultry, eggs, cheese and other articles of food may transmit pathogenic species of the paratyphoid group, and that mice and rats, cats and birds may be carriers of similar organisms, should stimulate us to trace the source of infection in every enigmatic case.

CONCLUSIONS

1. The term "typhoid fever" as commonly used by physicians includes more than one variety of disease.

2. Only that in which the characteristic serologic and cultural tests for the typhoid bacillus are obtained should be called typhoid fever.

3. To the others, which clinically may resemble typhoid very closely, the term "entericoid fever" may be applied.

4. The entericoid fevers are due to different strains of organisms of the paratyphoid group and to others morphologically similar (Gärtner's *Bacillus enteritidis*, etc.).

5. The source of infection is chiefly food derived from unhealthy animals.

6. Food (including drink) may become contaminated through contact with diseased meat, through rodents, birds, or through the discharges of carriers, etc.

7. So-called second attacks of typhoid fever are probably entericoid (paratyphoid) fever, provided of course the first was genuine typhoid fever.

8. In all cases of typhoid-like character careful search should be made for the source of infection, and blood-cultures and other tests for the determination of the infecting agent.

9. By combined clinical and laboratory investigations it should eventually be possible to distinguish, according to their specific etiology, the various entericoid diseases now grouped together.

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7. The absorption test was proposed by Castellani and is as follows: If it is intended to determine whether a given specimen of blood-serum contains agglutinins, for example, for the *Bacillus paratyphosus* B, the group agglutinins are first removed by mixing the serum with cultures of the typhoid bacillus, the *Bacillus paratyphosus* A, etc. Any agglutinins of these organisms will be absorbed, leaving that for paratyphosus B intact if it is present. It should be borne in mind that the paratyphoid produces very weak agglutinins, so that a negative Widal reaction for it has less value than in the case of typhoid fever.

Individual Health Depends on Community Health.—The health of the community depends on the health of the citizens, but the health of each individual also depends in some measure, often in large measure, on that of the other members of the community. Health of the individual is therefore a condition that, generally speaking, can be maintained only by a combination of individual and community effort, and its importance is such that in the activities of the city and of the state it should hold a prominent place. The health of the community should be of greater concern than commercial prosperity, for it is essential to commercial prosperity. Necessary as are our courts, our fire and police departments, and our educational systems, the importance of the community's attention to the citizen's health is second to none.—John W. Trask, *Pub. Health Rep.*

THE TREATMENT OF HEMOPTYSIS IN PULMONARY TUBERCULOSIS

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Hemoptysis of known pulmonary origin in tuberculosis is now treated at North Reading in a rather original manner. The plan in use was selected for its superiority after three years of gradual elimination of various forms of treatment.

Many methods commonly employed to cope with pulmonary hemorrhage were discarded after a fair trial on account of inefficiency and harmful sequelae. For instance, morphin, generally advocated and no doubt extensively used in the treatment of this complication, has fallen decidedly out of favor with us. The textbooks offer it for use by reason of the indication for the depression of respiratory activity, the allaying of excitement, and the suppression of cough. The idea is that all efforts should cooperate toward quieting the patient, but this seems to be without due regard for the alleviation of the trouble which causes the disturbance. Let one who prescribes morphin in such instances remain at the patient's bedside to observe the annoying symptoms which arise when the initial effect of the hypnotic begins to wear away, and he cannot help being impressed with the ultimately deleterious effect of that drug on the patient suffering from hemorrhage.

Our practice now is to discountenance the use of morphin and opium except in extreme cases, and to substitute therefor a treatment consisting mainly of depletive purgation. This plan seems most effective. Accordingly I feel that some description of its use and rationale merits wider circulation.

METHOD OF TREATMENT

The patient who begins by coughing to expectorate clear blood from the lungs is immediately placed in a reclining position and is admonished to make no exertion. A curved basin is placed at the side of the face so that the patient may expectorate easily without lifting or turning his head. Any tight-fitting garments are released, but it is not well at this time to try to undress the patient.

Nitroglycerin, in 1/100 grain dose, is given subcutaneously as early as possible after the onset of the hemorrhage. Meanwhile an attendant prepares an ice-bag, also cracked ice to be taken by mouth. The ice-bag is placed at the patient's chest and if pain in any particular locality therein is complained of, the ice-bag is centered at that point. It often occurs that the patient has felt pain and soreness in a definite part of the lungs for some time prior to the hemorrhage, and at this point may be the focus of the bleeding. Hence the advisability of keeping the ice-bag over that spot.

It is well to encourage the patient and to tell him that very few patients ever die from hemoptysis and that by keeping quiet he may escape any serious consequences. A few assuring words from the physician and nurse will go a long way toward quieting the demoralization and panicky fear which many patients experience on the appearance of coughed-up blood. The patient should be told that he can help matters immensely by refraining from unnecessary coughing, by lying quietly, flat on his back without a pillow and by keeping as calm as his excited state of mind will permit.

Assuming that the patient is not suffering from extreme asthenia and is not affected with severe gastroenteritis or any ulceration along the digestive tract, a dose of magnesium sulphate from 1 to 2 ounces is administered within fifteen minutes to one-half hour after the appearance of the hemoptysis. Heroic suggestion and encouragement on the part of the physician are often necessary and is at the same time effective in securing the patient's cooperation both to swallow this medicine and to retain it. At the state sanatorium we have noted few cases in which the patient has lost the dose given, for, realizing his critical situation, he appears anxious to do his utmost to assimilate the salts; these may be more or less disguised by various substances and rendered pleasanter and easier to take.

It might be urged that this treatment is dangerous in that it might have a tendency to encourage nausea and distress, with vomiting and gagging at a most critical period, and hence occasion the release of more blood from the lungs. This has not been our experience and, furthermore, we have seen very few cases in which it might be suspected that retching, following the administration of the salts, was attributable to that cause. The beneficial results of this treatment are seen as soon as the purgative action begins. In about eight out of ten so treated hemorrhages have not recurred after the initial attack. No posthemorrhagic pneumonias ensue such as often complicate cases in which heavy doses of morphin are given and the patient feels brighter and more comfortable, in contrast to the depressing aftereffects of the morphin. Our use of magnesium sulphate depends on two clinical observations as well as other empiric reasons. In the first place, we have noted that many patients having hemorrhage at the time of onset of hemoptysis are suffering from severe constipation. The coincidence of the two conditions is so constant as to warrant the belief that a causative factor is represented, at least in some degree, by the sluggish bowel condition. A popular testimonial as to the genuine value of this tenet is seen in the fact that patients having a tendency toward hemorrhage who have been advised to take exceedingly good care to keep their bowels free are so impressed with the effectiveness of this practice in abating the frequency of the hemorrhages and streaked sputum that they learn enthusiastically to care for this matter themselves.

In the second place, a series of experimental cases was studied with regard to blood-pressure. Whenever it was necessary to relieve a patient's bowels which had not moved for some time, the blood-pressure was taken before relief and after free evacuation of the bowels by magnesium sulphate, when it was found that the blood-pressure dropped anywhere from 5 to 15 mm. (Tycos.). The blood-pressure in many cases in which there was persistent constipation was higher than is usual in tuberculous persons.

Finally we have noted the successful result secured by applying depletive purgation in cases in which hemorrhage occurs and, as in other empirical matters, this reason must be of the greatest importance.

In reviewing the records for one year, and even prior to that time, we have found it noted that a patient afflicted with a profuse pulmonary hemorrhage and treated by the usual method plus a moderate dose of morphin, would often have a recurrence of blood expectoration after the effect of the last dose of morphin was exhausted. With every hypodermic of morphin given the patient's condition would really become more serious, for although hemorrhages might not occur within the next hour or so, it was evident, nevertheless, that the reaction against the aggravated condition was only postponed. It is obvious that the prospect of reaction was intensified by each dose of morphin. Two cases in which the patients were subject to hemoptyses are herein reported and the result of the treatment we have suggested is noted.

REPORT OF CASES

CASE 1.—M. S., a girl, aged 16, formerly employed in a large biscuit factory, was admitted to the sanatorium, May 15, with moderately advanced pulmonary tuberculosis. The sputum was positive for tubercle bacilli on the first examination.

Examination of the chest revealed well-established infiltration of the upper lobe of the left lung with scattered moist râles. There were signs of beginning infiltration in the lower lobe as well as at the right apex. The nasopharynx and larynx showed incipient atrophic change but no bleeding points or ulcerations. The patient was poorly nourished but in fair strength.

The clinical course in this case was uneventful until June 8, when two severe hemoptyses occurred. Each time the regulation treatment given was nitroglycerin, grain 1/100, subcutaneously and application of an ice-bag, followed a few minutes later by a hypodermic of morphin, grain ¼, and atropin, grain 1/100, given to allay undue excitability, which was a marked characteristic of the patient. The bleeding continued and on the second day two larger hemorrhages occurred. There had been almost no evacuation of the bowels for about sixty hours, laxatives having no effect, and enemas producing very poor results. Some relief, however, was soon obtained and it was noted that streaked sputum was subsiding. For the next two weeks bloody sputum was observed daily. Incidentally, the constipation was very obstinate.

June 22 the patient suffered a second series of severe hemoptyses. It was learned that no bowel movement had occurred for forty-eight hours. The first hemorrhage was preceded for about nine hours by a sharp pain in the upper left chest. It should be stated that the intelligence of this patient was exceedingly meager, and therefore the amount of cooperation accorded the nurses and physicians correspondingly small.

The first hemorrhage of this date was at 5:30 a. m., and amounted to 2 ounces. In addition to the routine treatment of nitroglycerin administration, sodium phosphate ½ ounce was given, but without effecting purgation. A hypodermic of morphin and atropin of the usual dosage was also given. At noon a 4-ounce hemorrhage occurred; nitroglycerin 1/100 grain subcutaneously was again given, the application of ice-bags renewed, and morphin ⅛ grain hypodermically administered. One hour later a full dose of magnesium sulphate (1 ounce) was given, with no result. At 3:30 p. m., 5:30 p. m., and 9 p. m., hemorrhages recurred in amounts respectively 15, 6, and 6 ounces.

The pulse was thready and rapid, and as the patient had lost much blood the outlook was quite poor. Although the indications appeared to favor enteroclysis or hypodermoclysis, we determined to try to obtain depletive purgation for empiric reasons.

Accordingly magnesium sulphate, 3 ounces, was given in solution and the patient was encouraged to retain it; in less than an hour large watery movements began, and hemorrhage did not recur.

The following day the sputum was entirely clear of blood and the patient, although weak, was quite comfortable. The following week the patient rallied splendidly, escaping the posthemorrhagic pneumonia which so frequently complicates these situations, particularly when such frequent doses of morphin have been used.

No more hemoptyses occurred to Dec. 21, 1912, when the patient was discharged from the institution as a "quiescent" case.

The other example of this class of cases presents a record essentially the same except that this case was not only of advanced consumption but also of advanced alcoholism, a not infrequent complication.

CASE 2.—A plumber, aged 28, stated that he had first noticed the lung trouble four months prior to admission. He had had no hemorrhages; the sputum was positive for tubercle bacilli and the disease was far advanced in both lungs.

He arrived at the hospital in an intoxicated condition and immediately began to oppose every sort of treatment prescribed, objecting to remaining in bed because it made him "nervous," "sicker," and protesting a variety of other alleged ill effects. The temperature ranged from 101 to 103 F., the pulse was rapid, the cough very distressing and marked tremors indicated the need of absolute rest. The patient became more unruly and almost unmanageable in the next few days and refused absolutely to cooperate in any way with those having his case in charge.

Blood soon began to appear in the daily specimens of sputum and as the patient was constipated, full doses of salts were ordered. The patient refused all medication. Hemorrhage precautions were ordered on November 1, but the patient was soon found walking about the ward, violating all orders and advice given for the prevention of hemoptysis.

November 2 a hemorrhage of 16 ounces occurred at noon; the patient refused to allow the nurse to give nitroglycerin subcutaneously and threw the ice-bag on the floor. There was a smaller recurrence of hemorrhage throughout the day and that night. November 3 a hemorrhage of 12 ounces occurred at 7:45 a. m., and blood was expectorated at intervals through the morning. The patient lost much blood and became quite weak and badly frightened. He was put on the danger list. He told the nurse and physician then that he would take anything. Two large doses of magnesium sulphate were given which effected the passage of several watery stools. There were no further hemorrhages and streaking in sputum subsided; the latter continued in slight amount, however, for six days. Active catharsis was kept up daily. The patient's hostile attitude changed to a better frame of mind. He is at present in the hospital, but has had no recurrence of hemorrhages.

The after-treatment, once the blood stops coming in any amount, is a matter of keeping the patient at rest, providing some liquid non-irritating nourishment and keeping the bowels clear. For at least twelve hours I keep the patient flat on the back without a pillow and insist on the use of the bedpan. The ice-bag is kept at the chest from two to three hours only and at the same time the rest of the body is kept as warm and as free from cramp as is consistent with absolute rest. It is perhaps better to remove the ice-bag from the chest early, and to replace it at intervals should necessity indicate. Much harm can be done by prolonging the application of cold to the thorax, for there comes a time when its contractile effect on the pulmonary blood-vessels is succeeded by a paralytic relaxation with ensuing trouble.

The tendency is to continue the ice-bag indefinitely, especially when it is left to the nurse, who regulates a matter of good treatment quantitatively. As long as the thorax is kept cold a warm water-bottle may be applied to the patient's stomach or feet, usually with considerable relief. The patient should be encouraged to look on the matter as cheerfully as possible, and a few hopeful words will often do a great deal toward dissipating worry and in adding to the patient's comfort. For medicine, sodium nitrate, 1 grain, may be given every three hours, with the hope that the blood-pressure will be reduced. This sometimes causes severe headache and its use is then discontinued. Empirically there seems to be no great benefit following its administration and its use is, therefore, only in accordance with the indication of a need to lower the blood-pressure.

Calcium sulphid in 1/6 grain tablets to the extent of three to six tablets three times daily are much in favor with us for the reason that it seems to cause the colored sputum to clarify more quickly, the supposition being that this drug renders the blood more coagulable. The hypothesis is apparently borne out and substantiated to some extent in practice.

If cough is very severe, codein by mouth in small doses will do much toward quieting the patient. I prefer to use this drug rather than heroin or morphin.

For nourishment the patient should receive 4 ounces of cold milk to which may be added a scant teaspoonful of lime-water every three hours. If the hemorrhage has occurred in the daytime, in the night I like to give the patient liquid nourishment, neither hot nor very warm, but with the chill taken off to relieve the empty stomach and to provide sustenance. If the sputum becomes clear within eighteen hours, semisolid nourishment in the form of dropped eggs may be given. I think it best not to starve the patient more than is necessary, for it seems better to provide means of nutriment which fulfils two purposes. Not only does it give the patient the means of making up the blood loss which has been sustained, but it also quiets and soothes the stomach, causes greater equilibrium of the circulation, more blood being centered in the splanchnic region and less about the affected pulmonary focus.

It is perhaps unnecessary to advise that visitors should not be permitted and that all causes of worry and excitement should be forbidden. The condition of a hemorrhage in a patient in this institution was aggravated and recurrence of hemorrhage stimulated by a domestic factional dispute carried to his bedside and waged there relentlessly at every opportunity which could be obtained until all his visitors were barred, whereupon the patient began to recover.

Formerly our hemorrhage patient, to whom morphin and atropin was administered in full doses, suffered a run of high temperature for a number of days following the hemoptysis. Sharply contrasted with this happening is the normal temperature and pulse of the patient treated by the latter plan. With the gastro-intestinal tract clogged and of little use in carrying off the accumulated toxic material in the bowels it is not surprising that the former condition of high fever, a manifestation of increased toxemia, should obtain. But with a clear and actively functioning bowel the amount and effect of toxemia is reduced to a minimum. Furthermore, the patient is ready to assimilate nourishment as soon as feeding can be safely resumed. Thus double advantage is gained, for, instead of increased wasting, there is quick resumption of an almost normal assimilation, and the relapse occasioned by the period of hemoptysis is of much smaller proportion. The loss of weight, in this latter case, may amount only to a few pounds, whereas formerly a loss of 10 or 12 pounds would occur and the loss sometimes be sufficient to handicap the patient beyond all hope of recovery.

The bedpan may be discontinued on the third or fourth day after the attack, but the patient is not to be allowed up any length of time for at least seven days after the clearing of all color from the sputum. While the patient remains in bed active massage of the lower extremities and body should be prescribed in the form of rubs with liniments, preferably oily camphor preparations, in order to make the patient comfortable and to assist maintaining an equilibrium of the circulation.

I have used preparations of suprarenal extract a sufficient number of times to disclose any material value it might have therapeutically in treating hemoptysis, but nothing has appeared to influence us in its favor. Instead of depending on the physiologic action of the various drugs recommended in treating hemoptysis we prefer the far more certain mechanical effect of depletive purgation.

Only two hemorrhage patients were treated by the production of artificial pneumothorax, and in both instances success was attained. The uncertainty as to which section of the lungs is producing the blood, unless the hemoptysis is strictly unilateral, warns against this practice for obvious reasons.

Constricting the lower limbs with a tourniquet, one at a time, and thus restricting the confines of the circulation, was formerly attempted when the amount of bleeding became dangerously large, but was without extraordinary result.

With the exception of occasional allusions to textbooks I have purposely refrained from citing the literature, in which there is a considerable accumulation of matter on this subject. I have not chosen to compose a critical discourse, but only to state the method of treatment of hemoptysis evolved by observation and practice in a clinic of fifteen hundred patients at the North Reading State Sanatorium.

SHIP-BORNE CHOLERA

THE SEA AS A FACTOR IN THE TRANSMISSION OF ASIATIC CHOLERA

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The seasonal advance of Asiatic cholera from East to West, over mountains and continents, has long been known to follow the paths of human travel and commerce. In the past century many wide-spread epidemics of the disease have embraced the entire continent, but since 1873 it has never prevailed to any extent in this country, although ship-borne cases have occurred from time to time at the various quarantine stations. It may be interesting to record a recent passing of the quarantine line by the disease, in a port separated by a sailing distance of 4,000 miles of ocean from the infected point of departure, and after a direct voyage averaging between ten and sixteen days at sea. The port of New York occupies this position with regard to the Mediterranean and eastern European ports, into which the stream of emigration is easily the largest of any port in the United States and also in the world. The volume of this traffic may be judged by the number of emigrants medically examined at quarantine,[1] which for the year ending 1911 was 533,485 and for 1912, 676,660. The nationality of the greater part of this large army is Italian, Greek, Turkish, Polish, Hungarian and Russian, with a certain number of persons from Asia Minor and the far eastern European lands. The existence of cholera in Italy, Russia and Turkey in Asia, had been noted with the onset of the summer season of 1911. Two deaths from cholera had been reported from Reggio di Calabria, Italy, on June 8, and in June 14 two more cases had occurred at Serrastretta and one at Lungro. The number of cases subsequently reported, however, did not indicate the presence of any extensive epidemic in Europe to warrant the taking of any special preventive measures by the health authorities on this side. The possibility of a cholera invasion of New York City appeared to be remote. The careful routine examination of passengers at foreign ports of departure, with an observation period of five days before sailing, and subsequently the disinfection of baggage and destruction of all foodstuffs carried by emigrants, was considered with reason to be a reliable control on ship-borne cases of the disease, which, with the long period for observation at sea, would seem to constitute a natural barrier against infection. In the following months of June, July and August, a continuous succession of cholera-infested ships arrived at quarantine, New York, and among the detained passengers many cholera carriers were found. It was thus shown that even with the strictest precaution against infection at ports of departure, the distance from an infected locality is no safe-guard against sea-borne cases of cholera. The potential infective ability of the healthy bacillus-carrier also has to be seriously regarded by quarantine authorities. On June 13, 1911, the S. S. *Berlin* arrived in New York and reported the death, with cholera symptoms, of a steerage passenger thirty hours after leaving Naples. Discharges from this passenger preserved until arrival were bacteriologically diagnosed as cholera. The following day, June 14, the S. S. *Europa* from Naples reported one steerage passenger sick with cholera symptoms. On his removal to the Quarantine Isolation Hospital, the disease from which he was suffering was confirmed bacteriologically as cholera. The discharges preserved from another passenger who was ill during the voyage were also confirmed as cholera.

On June 20 the S. S. *Duca degli Abruzzi* from Genoa and Naples reported three cases of cholera-like sickness among the passengers and crew; one of these patients died on arrival at quarantine and one member of the crew died while being conveyed to the quarantine hospital. These two cases were both diagnosed bacteriologically as cholera. A few days later two further cases of cholera developed among the detained passengers from this ship. After five days' detention for observation at quarantine, and one day in Ellis Island, the passengers were released. Four days later, June 30, one of these, an Italian boy aged 17, after proceeding to Auburn, N. Y., was taken sick with cholera-like symptoms, and died on July 1. Cholera was not diagnosed bacteriologically. Another passenger from the same ship, an Italian woman aged 33, sickened in Brooklyn, N. Y., on June 30 with suspicious cholera. She was returned to the quarantine hospital where she died on July 4. Cholera was diagnosed bacteriologically. These two cases were remarkable for the length of time between the known exposure to infection and the development of the disease, it being longer than the usually acknowledged incubation period for cholera. The probable explanation of this occurrence was perhaps an infection immediately before release from quarantine, by an undetected cholera carrier among the detained passengers from the infected ship.

On June 21 a passenger who had suffered from suspicious cholera symptoms was reported on the S. S. *Laura*, which sailed from Patras, Greece, on June 5, calling at the cholera-infected port of Palermo on June 7, where passengers were embarked. No cholera had been reported from Greece at that time and the voyage occupied sixteen days from Palermo. It was not remarkable that two cholera carriers were isolated at quarantine from the passengers who had been in intimate contact with the case on board ship. The immediate result of the development of cholera cases among released emigrants on shore

1. Annual Report of the Health Officer of the Port of New York, 1912.

was the issue by the Treasury Department Circular 45, 1911, requiring that the observation period of passengers detained from infected ships be extended to ten days at quarantine, unless after five days' observation bacteriologic examination should show them free from the cholera vibrio. Each case on confirmatory bacteriologic diagnosis was transferred to the Swinburne Island Quarantine Hospital for treatment.

At this time two further cases of cholera had been reported on shore. One, a Spanish sailor, who had arrived in New York on July 2 on the S. S. *Teodoro de Larrinaga*, and after being ashore for fifteen days was suddenly taken ill on the street with severe intestinal symptoms and collapse. Cholera was diagnosed at the Bellevue Hospital, to which he was conveyed, and from which he was removed to Swinburne Quarantine Hospital, cholera being bacteriologically confirmed. This case is remarkable in that there was no cholera reported by the ship on which he traveled, which had come from South America by a round-about route, including a call at Boston before coming to New York. The voyage occupied forty days, and no cholera had been reported from South America. If the infection had taken place on board ship, the incubation period was fifteen days before clinical symptoms became urgent enough to demand hospital treatment. Even if he were a cholera carrier developing an acute attack the initial infection remains a mystery. On July 5 the S. S. *Moltke* arrived from Italian ports with one case of cholera among the crew. The passengers were transferred to Hoffman Island for observation, where eleven further cases developed, making twelve cases of cholera from this ship, and nineteen cholera carriers were found among the detained passengers and crew.

A watchman who had been employed by the quarantine department to guard detained passengers on Hoffman Island, while visiting relatives on July 13, was suddenly seized with intestinal colic. He was transferred to Swinburne Island, where he died two days later; the bacteriologic diagnosis was cholera. This man had been in intimate contact with healthy passengers only, who had been exposed to cholera infection, and the presumption is that he was infected by a cholera carrier.

The S. S. *Perugia*, on arrival on July 15, reported two cases of illness on board at sea, among the passengers and crew. The cases now convalescent were bacteriologically confirmed as cholera.

With the arrival of the S. S. *Venezia* on August 11 from Naples and Palermo a suspected cholera case was reported among the crew. The patient had sickened on August 3, but was well on arrival. Bacteriologic diagnosis was negative for cholera. A passenger had also become sick at sea on August 7 and had died on the following day with cholera-like symptoms. On arrival, specimens from this case were positive for cholera. One cholera carrier was found among the detained passengers. The S. S. *König Albert* reported, on arrival, two sailors sick with cholera symptoms during the voyage from Naples and Palermo. On arrival one of these cases was confirmed bacteriologically as cholera. Two cholera carriers were found among the crew; after routine examination the remainder of the passengers were negative for bacillus carriers.

Three deaths, in children who had clinical symptoms of cholera, during the voyage from Italian ports were reported on August 18, by the S. S. *Re d' Italia*. The discharge preserved from these children, after bacteriologic examination, showed one of these deaths as being due to cholera. One member of the crew and a passenger were sick on arrival in New York, the former case being confirmed as cholera, and one cholera carrier was detected among the passengers in detention. With the arrival of the S. S. *Europa* on August 25, reporting a death from supposed cholera at sea, which was confirmed bacteriologically, the last of the cholera-infected ships were reported at quarantine.

SUMMARY OF CHOLERA CASES AT NEW YORK, JUNE 14 TO AUGUST 18, 1911

Fatal cases of cholera occurring at sea	6
Cases of cholera occurring at sea, patient arriving well	4
Cases of cholera occurring at sea, patient arriving sick	6
Cases developing at quarantine after arrival	15
Cases occurring among released ship's passengers and crew	3
Cases among quarantine employees	1
Cholera-bacillus carriers detected at quarantine	31

SPECIAL MEASURES TAKEN BY THE HEALTH AUTHORITIES

In consequence of the continual arrival of cholera-infected ships in the port of New York, special measures were instituted by the federal and state health authorities, including the issue on July 16, by the U. S. Treasury Department, of Circular 47, requiring the detention of all steerage passengers from cholera-infected ports until bacteriologic examination had proved them not to be cholera carriers. To insure the proper carrying out of the routine examination necessitated by this order the quarantine laboratory staff was reenforced by trained assistants from the state laboratory at Albany and from the U. S. Public Health Service at Washington. The steamship owners were urged that they advise their agents abroad not to accept immigrants from infected localities, in order to prevent congestion at New York quarantine. State and local authorities were asked to exercise special superveillance over newly-arrived emigrant laborers, and in the event of the occurrence of a case of acute gastro-enteritis or diarrhea to notify the State Board of Health without delay. Expert aid was offered by the federal authorities to any local health board requiring aid for the diagnosis of suspicious illness or for the inauguration of special preventive measures.

THE ROUTINE EXAMINATION FOR CHOLERA CARRIERS

The compulsory bacteriologic examination of all passengers from cholera-infected ports made necessary by the treasury order of July 16, 1911, required the taking of rectal swabs from every steerage passenger, as well as from the members of the crew. With practice the routine procedure became most expeditious, so that a thousand or more emigrants could easily be handled in one day. In the beginning, swabs from the rectum were deposited in sterile tubes, which were conveyed to the laboratory and there inoculated into Dunham's peptone solution. To save time and facilitate the procedure enough tubes of Dunham's medium were conveyed on board the steamship in wire baskets, holding one hundred each. The swabs, similar to those used for diphtheria work, were sterilized in paper bundles of fifty or one hundred. The passengers were first separated, the women and children being handled by a staff of women doctors and nurses. Each passenger with his name card was rapidly passed before the doctors in a convenient room such as the dispensary or ship's hospital. The swab was moistened in peptone water and inserted well above the anal sphincter. It was found best to obtain a well fecal-stained specimen, which was dropped into a peptone tube and numbered to correspond with the number on the identification card.

On completion of the procedure the peptone cultures were conveyed ashore and incubated for six hours at 37 C. (98.6 F.). Subcultures were then made in fresh peptone water and incubated for from nine to ten hours. Smears from the subcultures were stained with dilute carbolfuchsin (1:7) and examined microscopically. Any vibrio found was examined for motility and plates of alkaline agar made (3/10 to 5/10 alkaline to phenolphthalein). After incubation for from twelve to twenty-four hours the plates were examined, and any suspicious organisms present were tested for agglutination against an anticholera serum of high titer. For the purpose of simplifying the procedure of vibrio detection an attempt was made to utilize the known fermentative action of vibrios on saccharose for diagnostic purposes. An alkaline saccharose-peptone water was employed containing phenolphthalein as an indicator, the presence of sugar-fermenting vibrios being shown by the decolorizing of the medium. By the procedure good results were obtained in the limited time the special medium was used.[2]

A passenger found harboring the cholera vibrio was immediately isolated to Swinburne Island Hospital, where he was treated as a cholera patient. On a negative bacteriologic finding all passengers were discharged from detention. During the four months of routine examination for cholera carriers, 26,678 passengers were bacteriologically examined at quarantine, the number for each month being: July, 1,777; August, 5,105; September, 5,700; October, 9,389; November, 5,807.

THE CHOLERA VIBRIO

The peptone water for enrichment, and similarly the Liebig beef-agar medium for plates were employed, with an alkaline reaction to phenolphthalein of from 0.3 to 0.5 per cent., and this was found to be the most favorable reaction for the growth of the cholera vibrio. The cholera red was not obtained to any degree in peptone cultures containing a mixed intestinal flora, it was, however, fairly consistently present in pure cultures.

The colonies of the cholera vibrio in pure culture on alkaline agar plates, although readily distinguishable from those of other intestinal bacteria, were not so easily differentiated from the cholera-like vibrios. After twenty-four hours' incubation the growth was seen flattened, round colonies, with a clear-cut even edge, finely granular, with sometimes larger granules at the centers; yellow by reflected and bluish by transmitted light. There was also an opalescent appearance by transmitted sunlight. The odor was generally fecal, and the colonies presented an appearance of extreme fluidity, so that when touched with a platinum needle they tended to flow.

Typical motility was generally present in twelve-hour peptone-water cultures. In making a hanging-drop preparation, it was found that if any pellicle present were gently moved aside by tilting the tube and the platinum loop inserted just below the surface actively motile organisms were more certain to be obtained. The characteristic motility could be strikingly observed with the dark-field illuminator.

THE CHOLERA-LIKE VIBRIOS

A striking feature observed during the routine examination for carriers was the large number—over one hundred—of vibrios isolated from the fecal cultures, which gave a negative reaction with the specific serum. A detailed description of these atypical vibrio forms I have made elsewhere.[3] The morphologic and cultural resemblances to the cholera vibrio were so close in some instances that definitely distinctive features were difficult to find. As a rule the indol reaction was absent or slight, and they were all non-pathogenic to animals, even in large doses. In some of the strains isolated, saprophytic properties, such as pigment formation, clearly indicated the nature of the organism.

The presence of these aberrant vibrio types in association in the cholera cases has been frequently observed, notably by Zlatogoroff,[4] and by McLaughlin and Whitmore[5] in the Philippines, but the exact significance of the occurrence is yet undetermined. A curious incident bearing on this association was noted at quarantine in the isolation of the greatest number of non-cholera vibrios at one time, in the passengers of a vessel among whom two cholera carriers were found.

THE DIAGNOSIS OF CHOLERA

The occurrence during cholera epidemics of non-pathogenic vibrios, typically cholera-like in morphology, motility and cultural appearances, has caused such characters to appear of less account in the final differentiation of the cholera vibrio. Of more importance in the diagnosis of cholera are certain reactions of the body resulting from the invasion by the cholera vibrio, which are manifested especially in a powerful activation of those tissues concerned in the formation of the various cellular antibodies, the bacteriolysins, the agglutinins and precipitins. This phenomenon is witnessed in cholera convalescents, as well as in animals immunized against the specific organism.

Agglutination.—Although the agglutinating power of various strains of the cholera vibrio varies somewhat at times, it is always sensitive to the action of a strong antiserum, positive agglutination taking place with high dilutions of the serum, such as 1:10,000 and 1:32,000. The observation of agglutination may be carried out by the macroscopic method, using Wright's tubes. An emulsion of a 24-hour-old agar culture of the suspected organisms in broth or normal saline is mixed with the antiserum in various dilutions and drawn up into glass sedimentation tubes, which are sealed in the flame. Readings are taken at the end of two hours at 37 C. (98.6 F.), or twenty-four hours at room temperature. Controls with normal saline or normal horse-serum should be employed at the same time. Similarly, agglutination may be observed in hanging-drop preparations with the microscope. For general purposes the reaction is satisfactorily and quickly carried out by means of a macroscopic method with the naked eye. On an ordinary glass slide, an emulsion of the suspected organism is mixed with the diluted antiserum by means of a platinum loop. Immediate agglutination takes place with the cholera vibrio as shown in the formation of floccules and clumps in the hitherto opaque emulsion. It was observed that the maximum agglutination power of the cholera vibrio was seldom found to be as high as the titer of the serum employed. In suspected cholera convalescents, in which the cholera vibrio cannot be demonstrated in the stools, the patient's blood-serum may be tested for agglutination against a known cholera culture.

Pfeiffer's Reaction.—The reaction of Pfeiffer depends on the effect of a powerful cholera bactericidal serum on the cholera vibrio. An emulsion of the suspected organ-

2. Creel: Jour. American Pub. Health Assn., December, 1911, p. 899. Bendick: Jour. American Pub. Health Assn., December, 1911, p. 905.

3. Craster: Jour. Infect. Dis., May, 1913, xii, No. 3, p. 472.
4. Zlatogoroff: Centralbl. f. Bakteriol., 1909, xlviii, No. 5, p. 684.
5. McLaughlin and Whitmore: Philippine Jour. Sc., 1910, v, 403.

ism is injected into the peritoneal cavity of a guinea-pig, together with the bactericidal serum. A positive reaction is given if specimens of the peritoneal fluid removed at intervals of a few minutes show disintegration of the vibrios. A control experiment should be made with normal serum. This reaction is specific for cholera and enables a definite diagnosis of cholera to be made.

Complement-Fixation.—It has been shown by the reaction of Bordet and Gengou[6] that specific serums contain a certain substance (*substance sensibilisatrice*) which, when combined with its corresponding bacterial antigen, has the power of fixing another substance "complement," present in all normal serums, in this way preventing hemolysis when added to sensitized capsules. This binding of complement by a specific cholera serum and a culture of cholera vibrios may be employed for the differential diagnosis of an organism suspected to be the cholera vibrio. The anticholera serum is inactivated by heating at 55 C. (121 F.) for thirty minutes. A twenty-four-hour agar culture of the suspected organism is used as antigen, previously killed by heating to 60 C. (140 F.) for one hour and dissolved in physiologic salt solution. If the inactivated specific serum and the bacterial culture (antigen) is combined with normal guinea-pig serum to supply complement and after incubation for an hour at 37 C. is then added to a mixture of hemolytic serum and blood-corpuscles, no hemolysis takes place if the suspected organism is the cholera vibrio, complement having been absorbed by the combination of the specific serum with its antigen, the cholera vibrio.

THE CHOLERA CARRIER

It is well known that perfectly healthy persons may harbor the causative agents of certain diseases, notably in the case of typhoid fever and diphtheria, either as a persistent continuance of the organism in the secretion of the body after an attack of the disease or as an infection with the specific microbe without manifest subjective symptoms. The existence of a parallel condition in persons during cholera epidemics was observed by Rumpel in Hamburg, Metchnikoff in Paris, Vogler in Altona and Ivanoff in Berlin.

Thirty-one cholera-bacillus carriers were found among ships' passengers bacteriologically examined at quarantine during the period from July to November, 1911. A definite history of a recent intestinal attack was obtained in four of these carriers. The proportion of carriers detected to examinations made was considerably less than the number reported under similar conditions at Naples, 1910; at that time twelve carriers were found in 1,400 persons.[7]

Treatment.—Every person who was a cholera carrier was isolated and treated as a cholera patient. The difficulties in the treatment of such carriers are inseparable from the apparent condition of good health and freedom from subjective symptoms which are always present in these patients. Strict isolation was enforced, with all fecal matter rigidly sterilized until a negative bacteriologic finding was obtained. It was observed that a carrier detained at quarantine discharged cholera vibrios in the stools at irregular periods, between which intervals a negative finding might be obtained bacteriologically.[8] These negative periods were frequently of several days' duration. The potential danger to the public in the careless release from detention of a carrier of this kind would be manifestly great.

Duration of the Infective Period.—The length of time during which a cholera-bacillus carrier continues to be infective has been stated to vary within wide limits. Zlatogoroff[9] has recorded the isolation of the cholera vibrio from the stools of a person one year after recovery. Pasquale[10] succeeded in isolating the specific organism from the stools twenty-seven days after an attack of cholera. Saccone,[7] with an extensive experience, found cholera carriers to be infective between eleven and fourteen days. The majority of the carriers isolated at quarantine remained infective from a few days to two weeks or more; in one case the comma bacillus was present for fifty-four days.[8] Three or more negative bacteriologic findings at intervals of two days for a week or longer were required before a cholera carrier was released from detention.

THE CHOLERA CASES

Twenty-four cases of cholera were treated at the Quarantine Isolation Hospital, with thirteen deaths; a rate of mortality of 54.1 per cent. Five of these patients were moribund on admission. The duration of an attack of cholera and the rapidity of its termination is dependent on the virulence of the infective process, so that the characters of the disease varied somewhat in the individual. In the acute cases the classic signs of vomiting, purging, collapse, muscular cramps and coma were early in evidence, the stools being sometimes continuous, with incontinence of feces. The typical rice-water evacuations seldom showed any fecal staining and from them the comma-bacillus was obtained in pure culture. One case of cholera sicca was remarked; the patient had no stools; the symptoms were collapse with cyanosis, with an abdomen distended with fluid contents. Recovery took place. The milder cases of cholera showed only a slight diarrhea with no great accompanying physical discomfort.

Although the skin temperature is subnormal in cholera, the rectal temperature was found to be consistently high (102 to 103 F.), with subnormal intervals throughout the attack. This fluctuating rectal temperature at times showed wide ranges during the day; a difference of 6 degrees Fahrenheit between the morning and the evening readings was recorded, and a subnormal morning temperature frequently rising to 102 to 103 in the evening. This oscillating temperature often persisted for some days after all clinical symptoms had disappeared. In certain of the fatal cases in which excessive reactive processes were manifested in the hyperpyrexia the rectal temperature before death rose to 109 F.

Four patients succumbed on the first day of illness, one of these between sunrise and 11:45 a. m. and another within eleven hours of onset. Three died on the third, three on the fourth and one each on the second, sixth and eighth days, respectively. In the non-fatal cases the cholera vibrio persisted in the stools for various periods of time after the cessation of acute symptoms, usually from the seventh to the fourteenth day, and exceptionally for much longer periods.

SUMMARY

During June, July and August, 1911, ten cholera-infected ships arrived at quarantine, New York, from Mediterranean ports, bringing a total of 5,411 passengers and 1,789 members of ships' crews having been exposed to cholera. Six patients arrived sick and four were convalescent from the disease. Twenty-four cases were

6. Bordet and Gengou: Ann. de l'Inst. Pasteur, 1901, xv, 289.
7. Saccone: Ann. d'med. navale, March, 1911, p. 315.
8. Creel, R. H.: An Unusual Cholera Carrier, THE JOURNAL A. M. A., Jan. 20, 1912, p. 187.
9. Zlatogoroff: Centralbl. f. Bakteriol., 1911, lvii, No. 4.
10. Pasquale: Gior. med. d. R. esercito ed R. marina, 1893, p. 936.

treated at the isolation hospital on Swinburne Island, with thirteen deaths. Two cases occurred among released passengers in New York City and state, and one member of a ship's crew. One fatal case occurred among the quarantine employees. Thirty-one cholera carriers were detected by routine examinations; these were isolated and treated as cholera patients. Four of these gave definite histories of a recent sickness with diarrhea. During the four months of routine examination of passengers from infected ports for cholera carriers, 26,678 persons were bacteriologically examined.

Over one hundred non-cholera vibrios were isolated during the routine examination. Many of these resembled the vibrio of cholera so closely that no difference was possible, except the negative reaction with the specific serum. In the cholera cases, a fluctuating rectal temperature of a degree above or below normal persisted for some days after all clinical symptoms had subsided, and after the specific organism had ceased to be demonstrated in the stools. The cholera carriers with no subjective symptoms could be infective up to fifty-four days. The cholera cases remained infective by the presence of the comma-bacillus in the stools for one to two weeks after all symptoms had abated, exceptionally for longer periods.

CONCLUSIONS

Time and length of voyage from infected districts does not confer any special immunity against the occurrence of Asiatic cholera in this country. The well-established existence of the cholera-bacillus carrier has altered considerably the aspect of cholera prevention, for we have to deal not only with real, but also with potential agents of infection. The high efficiency of present-day quarantine procedures has rendered the possibility of spreading infection from cholera cases extremely slight. The real danger to the public is not alone the person sick with the disease, but also the person infected with the specific organism and presenting no apparent symptoms of illness. In typhoid carriers the gall-bladder is known to be the store-house of the infecting organism. That a similar condition may exist with cholera carriers is suggested by the observations of Greig,[11] who demonstrated by cultural methods the presence of the cholera vibrio in the gall-bladder eighty-one times out of 271 cases of fatal cholera. In the prevention of cholera, besides the effective isolation of the sick there has developed in our experience at quarantine, the necessity of extreme caution in the release of contacts or fellow passengers from detention, before a routine bacteriologic examination has proved them free from the cholera vibrio and even after such a routine procedure there remains always a possibility of the escape of a bacillus-carrier who may have been examined during a negative interval of an intermittent discharge of the infecting organism.

When sporadic cases of cholera occur in any community (the so-called cholera nests) it would seem that the bacteriologic examination of drinking-water and of food, although advisable always, is not of the same importance as a diligent search for the true source of infection, the infected, presumably healthy person, the proper means for whose detection, although involving a state in great outlays of money and time, are of necessity justified in emergencies for the proper preservation of the public health and confidence.

I am indebted to the courtesy of Dr. F. C. Clark, chief medical officer of Swinburne Island Isolation Hospital, Quarantine, N. Y., for the opportunity to review the clinical reports of cholera cases and cholera carriers.

11. Greig: Lancet, November, 1912, ii, p. 1423.

THE "WASSERMANN-FAST TABES"

A SEROLOGIC PRECURSOR OF TABOPARESIS

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The question of tabes from a diagnostic standpoint offers very few difficulties. Where clinical manifestations are few and indefinite, laboratory aids as elaborated by the latest serologic methods give ready and at times conclusive evidence of the presence of this disease. It is not my purpose to travel over well-beaten paths of diagnosis, be it clinical or serologic, but to offer to the neurologist a guide to therapy and to assist in the rendition of a prognostic opinion in this disease. To the serologist it may also be of interest to know that some forms of tabes behave differently from a serologic attitude than others. As there are different types of tabes clinically, so there are also various serologic manifestations of this disease. The clinician is thoroughly familiar with the form of disease which will ultimately present the full picture of taboparesis and is also acquainted with the type that is purely degenerative and lacks all evidence of activity in the meninges. The serologic development of the last few years in connection with diseases of the nervous system not only gave us the laboratory accompaniment of this disease, but also enabled the careful observer to point out here and there occurrences in the analysis of the serum and the fluid that are as important as the ability to diagnosticate this malady. It seems to me that neurologists are beginning to recognize the value of analyses of the cerebrospinal fluid and are gradually becoming more familiar with the utilization of laboratory data. One of the facts that I, together with Dr. L. Casamajor, pointed out in 1912, in connection with tabes, was the very favorable clinical and serologic reactions obtained with tabes of the "hyperlymphocytic" type. Our observations still hold good after a large additional number of such cases has been studied. On the other hand, we were considering the treatment of tabes that showed no cerebrospinal fluid abnormalities as rather inconsistent. Taking these things together, one can at a glance appreciate how much less informed we were in regard to the gauging of treatment before the era of "neurologic serology" as compared with the newer methods of procedure. The value of serologic data increases with their number, and it is with this in view that I have undertaken the writing of this article.

Having studied serologically over 650 cases of tabes of various types, and in some instances having observed the changes in the serum and cerebrospinal fluid on as many as twelve occasions in the same patient to note the adequacy of therapy, I had the opportunity to note the effect of various therapeutic procedures on the serology of a large proportion of cases and carried away the impression that there are distinct types of tabes that can be properly judged only after a thorough course of strenuous treatment. Although the patient may at the time of the first analysis show the serologic picture of tabes of the "hyperlymphocytic" type, the result of vigorous treatment will tend to show whether or not the serology is amenable to therapeutic effort. I have observed a number of cases in which despite the frequency, dosage and specificity of the remedy, the serum would still show a positive Wassermann reaction. A few more advanced cases would also show an unchanged positive Wassermann in the cerebrospinal fluid. I have designated these cases as "Wassermann-fast tabes" in contradistinction to those forms of

the disease that, as shown by the Wassermann test, yield readily to therapeutic efforts. When one studies the serology of general paresis one is struck with the large percentage of positive Wassermann reactions obtained on the serum and spinal fluid of this disease. When the subject of percentage of positive results is studied critically, particularly the observations that give 100 per cent. positive reactions even in general paresis, one is fully justified in asking the question: Is it possible that the cases reported were never treated with the remedies commonly used in such cases? Still further: If they were treated, some even with great thoroughness, is it possible that the Wassermann reaction remained unchanged and gave 100 per cent. of positive results? These questions are rarely asked and the results are accepted unchallenged. There should be no 100 per cent. of positive Wassermann reactions, and the experience of the majority bears out my contention. The reason why the percentage of positive Wassermann reactions in the serum from tabetics ranges between 55 and 70 is that the treatment of many of these cases was, from the point of view of serology, apparently successful. The low percentage of positive results also speak for the amenability of the serology of this disease to therapy, for it is self-evident that the easier it is to influence a disease with proper therapeutic measures, the fewer positive results are obtained with the Wassermann test. The number of cases of tabes that give positive Wassermann reactions are composed chiefly of patients who were not treated recently, or were treated insufficiently or belong to the

TABLE 2.—RESULT OF TEST IN TABOPARESIS, CASE 2*

Treatment	Serology Performed	Serum W. R.	Cerebrospinal Fluid Analysis		
			W. R.	Glob.	Lymphoc.
Hg. inunct. 30 doses 4 gm.	3 weeks after therapy.	+	+	+	53
6 weeks later, 21 injections Hg. salicyl.	4 weeks after therapy.	+	+	—	53
8 months later, 606 0.6 in vein	4 weeks after	+	+	—	50
1 week later, 606 0.6 in vein	3 weeks after	+	+	—	41

* Reduction of Fehling's solution normal throughout.

type of cases of "Wassermann-fast tabes." The reason why general paresis gives the greatest percentage of positive Wassermann reactions is due chiefly to the fact that very few positive reactions in this disease become negative after treatment, in other words, general paresis typifies the Wassermann fast neurologic disorder of syphilitic origin.

The negative reactions obtained with general paresis are composed chiefly of those of the early cases which frequently give a negative Wassermann reaction in the serum and a positive result in the cerebrospinal fluid. It is very proper to apply to the serologic analogy of the "Wassermann-fast tabes" and its relation to general paresis the dictum of Charles Darwin: *Natura non fecit Saltus*, which is borne out by the clinical course of this type of locomotor ataxia. In the twelve cases of the "Wassermann-fast" type observed by me, nine patients developed full-fledged taboparesis and three died shortly after the paretic signs manifested themselves. To cite a few cases:

CASE 1.—Mr. H. S., aged 44, married; no children; lues eighteen years ago; shooting pains; girdle crises; Argyll Robertson pupils; Romberg phenomenon; no mental symptoms. Serology before treatment, positive Wassermann reaction in serum and fluid; excess of globulin; 60 lymphocytes per cubic millimeter; prompt reduction of Fehling's solution.

CASE 2.—Mr. Sp., aged 52, married; wife had four miscarriages. Lues at 20; markedly ataxic; girdle crises; Argyll Robertson pupils. Serology before treatment, positive Wassermann reaction in serum, same in fluid; slight excess of globulin; 36 lymphocytes per cubic millimeter; normal reduction of Fehling's solution.

TABLE 2.—RESULT OF TEST IN TABOPARESIS, CASE 2*

Treatment	Serology Performed	Serum W. R.	Cerebrospinal Fluid Analysis		
			W. R.	Glob.	Lymphoc.
0.6 salvarsan intraven.	2 weeks after therapy	+	+	+	33
1 week later the same	3 days after therapy	+	+	+	26
10 days later 914	One week after therapy	+	—	—	21
1 day later 914	3 days after therapy	+	—	—	21
1 week after 914 intraven.	One week after therapy	+	—	—	16

* Reduction of Fehling's solution normal throughout.

REPORT OF CASES

The treatment given these patients by no means represents the most active specific therapy that could be employed. The reason for this was the discouragingly rapid decline in the general health of the patients. The first one of the two died two months after the last treatment. The second patient developed taboparesis one year after the last treatment and died in a paretic decline.

These cases of tabes represent the absolute "Wassermann-fast" variety of the disease. It is sometimes, however, possible to obtain a weakly positive result after very vigorous treatment, and on very rare occasions even a complete negative Wassermann. The latter, however, does not remain negative for a long time but may return to positive a week or two after the last negative analysis. These are only relatively fast tabetics whose Wassermann reaction sooner or later will reassume its absolute fast nature, initiating in the course of time the clinical signs of taboparesis. Time will tell whether salvarsan or any other as yet undiscovered remedy used in large and frequently repeated doses will ever tend to ward off the approach of an impending taboparesis in a tabetic; at present it seems that frequently repeated small doses of neosalvarsan produce very encouraging changes in the psychic manifestations of the disease. In my opinion a patient with tabes who presents an absolute or even a relative "Wassermann-fast" tendency should be given the benefit of this treatment with small doses (0.3 gm. of neosalvarsan) every third or fourth day. I do not think that the Wassermann will be influenced at all, or at most an absolute fast condition could be made a relatively fast one. In fully developed general paresis one encounters the absolute "Wassermann-fast" condition more often than in any other syphilitic disease of the nervous system, and as the serology of a tabetic inclines toward assuming the "Wassermann-fast" tendency, it is my opinion that the clinician should be on the lookout for clinical evidences of an approaching taboparesis.

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Physiology and Dietetics.—"The teaching of physiology on the subject of diet must be tested carefully by the light of clinical experience."—David L. Edsall, in *Clin. Jour.*

AN EXPERIMENTAL AND CLINICAL STUDY OF INTERNAL HYDROCEPHALUS *

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Numerous methods have been suggested for the treatment of internal hydrocephalus, none of which have been productive of satisfactory results. So long as the etiology of this condition remains obscure, the treatment must necessarily be only symptomatic. In the hope of clarifying its etiology and thus affording a rational working basis for its relief, we have undertaken this investigation.

The present communication, which is presented as a preliminary report, includes observations on dogs after the production of experimental hydrocephalus, together with observations on patients suffering from the disease. We have also considered the manner and the place of formation and of absorption of the normal cerebrospinal fluid and the relation of these factors in the production of this pathologic condition.

HYDROCEPHALUS EXPERIMENTALLY PRODUCED

From a survey of the literature we have been unable to find any record of hydrocephalus having been produced experimentally. In our experiments an obstruction has been placed in the aqueduct of Sylvius, and thus the only way of exit for the cerebrospinal fluid from the third and the lateral ventricles has been occluded. An internal hydrocephalus has invariably resulted. The following is the procedure:

A bilateral suboccipital decompression is made through an occipital midline incision. After exposure of the cerebellum it is retracted upward, and the foramen of Magendie carefully enlarged by incising the membrane joining the cerebellum and medulla. A piece of cotton in a small gelatin capsule, placed on the end of a graduated carrier, is inserted through this enlarged foramen of Magendie and gently passed along the floor of the fourth ventricle into the aqueduct of Sylvius, where it is deposited by withdrawal of the carrier. The symptoms which are observed following the operation are principally lethargy and vomiting (general pressure symptoms) dating from the time of operation. When carefully performed there are no irritative or destructive symptoms from the operation. This hydrocephalus therefore is due to a purely mechanical obstruction in the aqueduct, as there is no interference with the veins of Galen.

Since the venous obstruction is considered a possible cause of hydrocephalus, a series of experiments was conducted in which the vein of Galen and the straight sinus were ligated. In none of these cases did hydrocephalus result.

ABSORPTION OF THE CEREBROSPINAL FLUID

There are many theories concerning the place and manner of the absorption of cerebrospinal fluid. In the study of absorption in the experimental and clinical work we have used almost exclusively phenolsulphonephthalein. This inert colored solution, first introduced into practical medicine as a renal test by Rowntree and Geraghty, has since been shown to be an accurate index of fluid absorption when the renal function is normal. It is very stable, is excreted in the urine with great rapidity, is easily detected in minute traces and is readily adapted to accurate quantitative estimation.[1]

Since an internal hydrocephalus can be experimentally produced by occluding the aqueduct of Sylvius, it is evident that absorption of fluid from the ventricles is less rapid than its production. In the studies of the absorption from the ventricles of patients with an internal hydrocephalus due to obstruction in the aqueduct, after the introduction of phenolsulphonephthalein in the lateral ventricles, there is excreted in the urine from 0.25 to 1 per cent. during a period of two hours; but when it is injected into the subarachnoid space of the same patient there is an excretion of from 35 to 60 per cent. in the urine in the same period of time. This demonstrates that the absorption of cerebrospinal fluid takes place almost entirely in the subarachnoid space.

It is evident that the fluid must be absorbed either into the blood or lymph-vessels. When phenolsulphonephthalein or other inert colored solutions are injected into the subarachnoid space, they appear in the lymph of the thoracic and right lymphatic ducts only after an interval of from thirty to fifty minutes, and only a faint trace is present even after two hours, whereas, they appear in the blood in three minutes and in the urine in six minutes and, as mentioned above, from 35 to 60 per cent. is excreted in the urine at the end of two hours. These facts indicate that the cerebrospinal fluid passes directly into the blood and that the lymph-vessels are not concerned in its absorption. There are three principal views regarding the manner in which the cerebrospinal fluid passes into the blood: (1) by means of stomata arranged along the venous sinuses; (2) through the pacchionian granulations, and (3) by a general process of osmosis.

When a suspension of fine granules is injected into the subarachnoid space the granules do not pass into the blood except in very minute quantities and after a long interval of time. Consequently the assumption of special openings (stomata) from the subarachnoid space into the venous sinuses seems unlikely. This applies to granules injected into the subarachnoid space under normal conditions of pressure. If pressure is used, especially on young tissues, foreign materials can easily be forced into the veins. In adult animals this requires a very high pressure. It should be noted that stomata were formerly believed to exist in the peritoneum to explain the absorption from this cavity, but this has been shown not to be the case.

That the pacchionian granulations do not play any special rôle in absorption can, we think, also be shown. These granulations are absent in many species of animals, are always variable in number and size and develop principally in adult life. After fine granules are injected into the subarachnoid space, local collections are deposited along the sinuses—especially the superior longitudinal sinus—in the interstices of the fibrous meshwork which forms the walls of the sinuses. These deposits are in all essentials similar to those in the pacchionian granulations. There is always a layer of dura and arachnoid separating these masses of granules from the blood in the veins. This is a much greater mechanical barrier to absorption than is present in the exposed capillaries of the pia-arachnoid.

After the injection of phenolsulphonephthalein into the spinal subarachnoid space (the communication with

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1. It should be emphasized, however, that ordinary solutions of phenolsulphonephthalein are made up in alkali, which is sufficient to militate against its use in the central nervous system. To overcome this defect we use a neutral solution specially prepared for us by Hynson, Westcott & Co.

the cerebral subarachnoid space being closed), there is found to be a quantitative absorption proportionately as great as from the entire subarachnoid space. This shows that the absorption from the spinal subarachnoid space is similar to that from the cerebral. It is obvious, therefore, that cerebrospinal fluid is absorbed by a diffuse process from the entire subarachnoid space and is not restricted to any special locality, as, for instance, the region of the venous sinuses or the pacchionian granulations. From the foregoing observations, absorption from the subarachnoid space appears to be very similar to that from the pleural and peritoneal cavities, though it is somewhat less rapid.

FORMATION OF THE CEREBROSPINAL FLUID

It has long been known that there is an active formation of cerebrospinal fluid as evidenced by the rapidity with which the fluid reforms after it has been withdrawn either by lumbar or ventricular puncture. The endowment of the chorioid plexus with an elaborate blood-supply indicates that it is a structure with a special function. Since the work of Faivre (1854) and Luschka (1855) showing the secretory character of the cells, the chorioid plexuses have been regarded as glands, from which at least part of the cerebrospinal fluid is formed. The discovery of secretory granules by *intra-vitam* staining by Francini, and also by Bibergeil and Levaditi, leaves but little doubt as to the secretory nature of this function.

We have shown that practically no absorption takes place in the ventricles, at least under the pressure from an abnormal accumulation of fluid. Since this is true and since hydrocephalus results from an experimental block in the aqueduct of Sylvius, it is evident that the fluid forms in the ventricles. These facts demonstrate an irreciprocal permeability of the fluid-forming structures, and emphasizes the secretory rather than the mechanical formation of the cerebrospinal fluid.

OBSERVATIONS ON PATIENTS WITH HYDROCEPHALUS

In these cases we have applied the phenolsulphonephthalein test in order to determine the amount of absorption from the ventricles, the amount of absorption from the subarachnoid spaces and whether or not there was free communication between the ventricles and the subarachnoid spaces. Subsequently the results of these tests have been compared with the pathologic findings. Phenolsulphonephthalein, as has been said before, is perfectly harmless, and when used for injection into the ventricles or subarachnoid spaces produces no reaction.

From observations made on patients without hydrocephalus it has been possible to establish a normal standard for the excretion of phthalein after its injection into one or the other of these cavities. In all cases the kidney function has been shown to be normal. When injected into the ventricles phenolsulphonephthalein normally appears in the urine in from ten to twelve minutes, and after two hours from 12 to 20 per cent. is excreted. After its injection into the subarachnoid space, it appears in the urine in from six to eight minutes, and from 35 to 60 per cent. is excreted in two hours.

When phenolsulphonephthalein is injected into the ventricles, it appears in the lumbar spinal fluid within two or three minutes. In hydrocephalus this becomes a most important test, for it enables one to determine accurately the patency or obstruction of the channels of exit from the ventricles to the subarachnoid space. Furthermore, fluid passes upward into the ventricles after the injection of phenolsulphonephthalein into the lumbar subarachnoid space.

By comparing the results of these tests with those obtained in hydrocephalus, we are enabled to establish two types of this disease. In the first type, after the injection of phenolsulphonephthalein into the ventricles, the time of its appearance in the urine is greatly delayed (from twenty to forty-five minutes) and the quantity excreted in two hours is practically negligible (from 0.25 to 1 per cent.). The excretion of phenolsulphonephthalein in this group after its injection into the subarachnoid space, however, is practically normal (time of appearance from six to eight minutes, quantity excreted in two hours from 35 to 60 per cent.). Furthermore, after the injection of phenolsulphonephthalein into the ventricles, it has not, in the cases observed, appeared in the spinal fluid. In this group, we have found at necropsy an obstruction to the passage of cerebrospinal fluid from the ventricles to the subarachnoid space. In two cases there was a congenital closure of the aqueduct of Sylvius, a third showed old adhesions obliterating the basal foramina of Magendie and Luschka, and in the fourth these foramina were closed by a thick tuberculous exudate which completely covered the base of the brain.

In the second type the excretion of phenolsulphonephthalein after its injection into the subarachnoid space is greatly diminished (from 8 to 15 per cent.), and the appearance time delayed (from twenty to thirty minutes). The amount excreted after its injection into the ventricles likewise is greatly diminished, undoubtedly due to the low subarachnoid absorption. In contradistinction to the first type the communication between the ventricles and the subarachnoid space is open. This is shown by the prompt (from two to three minutes) appearance in the spinal fluid of phenolsulphonephthalein after its injection into the ventricles. We have had the opportunity of examining two patients of this type, but as yet have made no pathologic observations. In both there has been an antecedent history of meningitis, one of which was due to the meningococcus.

These two types of hydrocephalus may be readily differentiated by determining the patency or occlusion of the channels of exit from the ventricles. In Type 1 these channels are obstructed and hydrocephalus results because there is no absorption from the ventricles. In Type 2 the channels are patent and hydrocephalus is due to the diminished absorption from the subarachnoid space.

It is a pleasure to express our gratitude to Professors Halsted, Howland and Cushing for suggestions during the course of the work, and for the opportunity of carrying out these investigations.

SOME RECENT CONCLUSIONS ON ABDOMINAL ROENTGEN-RAY WORK

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At present the Roentgen-ray bismuth method of diagnosing conditions of the alimentary canal is generally utilized. Since the work of Holzknecht was advanced, roentgenologists, and following them, surgeons and internists, have been accepting various reports as diagnostic. During the present winter I have checked up my Roentgen-ray findings with those of the laboratory

and those noted at operation, and a few of the facts of the Roentgen-ray method of examination alone seem worthy of presentation.

After a trial with several methods, I find that plugging the cardia so as to retain the bismuth in the esophagus and then making stereoscopic plates of the esophagus while the patient is in the standing position is the best means of diagnosing new growth of the esophagus before marked stenosis exists. This is true of studies of the gullet itself and also of extra-esophageal conditions. The second method that answered to good purpose was giving the bismuth salt in about 25 gm. quantities suspended in two ounces of syrup of acacia. This makes about four swallows and thickly coats the interior of the gullet, giving fairly sharp shadows for studying the course of the canal as well as its rugae and for gaining an idea of the structure when viewed fluoroscopically.

In the study of motility and exit from the stomach in 203 cases of distinct gastroptosia, in which hourly x-ray observations were made, the conclusion was plain that the x-ray method of diagnosing stasis in the stomach is not as practical as the test-meal method. One hundred and twenty-six of these cases examined by the bismuth x-ray method showed delay of exit of six hours or more, while only thirty-one showed the delay by the test-meal method. In some instances the bismuth x-ray method showed a delay of nine hours or more, when the test-meal method showed a normal evacuation. Instances were encountered in which bismuth was present in the stomach as late as eighteen hours after ingestion, while the stomach on a mixed meal was empty in four and one-half hours. Further, in many cases, apparently from one-fourth to one-half of the amount of bismuth ingested was present in the stomach six hours afterward, and the studies of the pylorus and of the motility as seen in the plates and the test-meal findings showed the exit as well as the course of bismuth to the ileocecal region to be normal. It is apparent, whatever has been advanced to the contrary, that the method of examination by food extraction is decidedly more to be depended on in gaining an idea of exit from the stomach than is the bismuth x-ray method, for it was strongly suggested that foods pass from the stomach in decidedly less time than will bismuth or any other form of metal salts used to throw a shadow, probably because of the pulverized salts adhering to the mucosa. Studies were made by giving the bismuth suspension after a mixed meal hoping that the meal would cause a normal exit of the bismuth, but it was found in a number of instances that the bismuth caused a delay in the exit of the food; and, if the bismuth was given before the food was taken, the delay of the bismuth was more marked in that it even held the food back somewhat.

Those cases in which a rectal injection of bismuth, to outline the colon, and bismuth by mouth were given at the same time showed, in hourly studies of the stomach afterward, that the bismuth in the colon caused some retention of the bismuth in the stomach, and it therefore seemed unwise to continue the procedure of noting both the colon and stomach at the same time.

It was plain in some of the gastroptosis and splanchnoptosis cases that the method of estimating the rate of transit through the intestine to the ileocecal valve to be six hours, and the time for its accumulation in the descending colon, sigmoid and rectum to be twenty-four hours, should be modified. Seven of the cases in which the bismuth was localized in the cecum and proximal transverse colon at the end of the twenty-four hours showed no diseased condition in the colon other than atony and neuromuscular dilatation. From the plates of these cases the belief seemed warranted that the rectal-injection method for outlining the colon and studying its anatomy is better than the method by mouth in which the making of observations at intervals of six hours or more to note the transit of the bismuth is used. That is, in so far as the colon is concerned, upward transit of bismuth is generally a better means of studying the motility and stricture than is the use of bismuth from above, although an occasional case could be diagnosed by the descending instead of the ascending bismuth.

The winter added three cases in which ulcer was seen pitted with the bismuth. Against these three, twenty-seven were diagnosed as gastric or duodenal ulcer, gastric ulcer being found twelve times. Of the fifteen remaining all were duodenal ulcers but one, which was a mass of adhesions in which a cause could not be figured out satisfactorily. In two of the duodenal ulcers, gastric ulcer was also present, and in one of the gastric a duodenal ulcer was found. The twenty-seven patients were all operated on, those not operated on not being reported. In the cases of duodenal ulcer the diagnosis was best made by the history and the laboratory methods rather than by the x-ray method, which in my experience was too fallacious for accurate diagnostic deduction.

Carcinoma of the stomach was best diagnosed by the x-ray method, for by it four cases were diagnosed early enough for complete excision and expectation of a cure; in none of these was the history, test-meal or other laboratory methods of so much value. In the late cases either or any combination of methods sufficed.

Adhesions of the colon were best diagnosed by the x-ray method, there being no laboratory findings to take its place. An occasional case of gall-bladder adhesions was diagnosed by x-ray, but this method could not be depended on as could the history, examination and an occasional suggestive test-meal leading to the diagnosis of cholelithiasis or chronic cholecystitis. In chronic appendicitis the x-ray was almost valueless, the history and examination methods still being the best. Lane kinks were so commonly met with when taking x-rays in the Trendelenburg position that it is now doubtful to me that they have the surgical significance Mr. Lane placed on them. In only nine of the 167 cases in which they were noted could they be proved to be factors in causing delay at their site or above it in the stomach. Further, in the 200 or more laparotomies which I attended during the winter in which Lane kinks were searched for, the characteristic kinks were present in at least 90 per cent.; the same was true of the lesser number of necropsies performed.

Four cases of renal stone were encountered in which the renal calculus was not suspected from the history; in most cases in which this condition was suspected from the history and urine findings, renal stone shadows were seen in the kidney substance, pelvis, or ureters. When in the latter, all of them showed the stoppage of the transit of the stone at the brim of the pelvis or just short of the bladder. One case in a series of plates showed definitely what looked like a calculus in the pancreatic duct; operation proved it to be a calcified gland outside of and near the head of the pancreas.

126 East Sixtieth Street.

THE TREATMENT OF PARALYSIS OF ANTERIOR POLIOMYELITIS

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Laymen, and some members of the profession, accept a statement made by Dr. Simon Flexner of the Rockefeller Institute, New York City, that no treatment is available at the present time for anterior poliomyelitis, as referring to the subsequent paralysis, whereas, Dr. Flexner is referring to the inflammation in the cord. It has been the means of deterring parents from making an effort toward treating the paralysis occurring in their children. What Dr. Flexner wished to convey in his remarks was that as yet nothing was known to arrest the inflammation in the cord and prevent the paralysis occurring before paralysis appears.

Fig. 1.—Case 1. Perfect recovery after treatment by high-frequency current, massage and muscle education.

Fig. 2.—Case 2. Disease began at 1½ years; treatment, 14 years later; recovered function in face and arm in 6 months.

What can we do to bring about the best return of function in the muscles affected by the paralysis? What should treatment consist of? The treatment herein presented consists of the use of electricity, massage, hydrotherapeutics and muscle education, in which there is a mental concentration to guide the muscle effort.

Space will not permit of the description of splints either for prevention of deformity or aiding motion.

ELECTRIC TREATMENT

After an extended review of medical literature, I have failed to find any detailed descriptive method of the use of electricity and massage in infantile paralysis, so I shall describe what I consider to yield the best results. When should electric treatment begin, and what form of current should we use? Many writers advise waiting from four to six weeks after the temperature becomes normal before doing anything in the way of treatment. According to the rules of the department of health of the city of New York, six weeks' quarantine is required. I have found that we obtain the best results by beginning when paralysis appears and even before the temperature is normal.

I have found, in the application of the Oudin or high-frequency current in cases of obliterating endarteritis, that the skin became blanched and remained so for several minutes, showing that the primary effect of the high-frequency is a contraction of the blood-vessels. With this effect in view, hoping to reduce the blood- and serum-compression on the nerve-cells in the spinal cord, I have, in the first few days of the paralysis, applied this current along the spinal column and feel positive that I have relieved the compression in the cord and hastened recovery.

Through the experiment of the United States government physicians in the Philippines, we have discovered that the high-frequency current materially destroys bacteria in water and also destroys their toxins. Hence we may conclude that it has a beneficial effect on the inflammation in the cord, in addition to its mechanical contraction of the blood- and lymph-vessels. When the temperature is between 98.5 and 99.5 F. and in some cases in which high temperature continues for several weeks, I have not let this deter me from treating the patient.

Fig. 3.—Case 3. Recovered function in arm and legs with treatment by electricity and massage, etc.

I give to the muscles involved a sinusoidal current, alternating with a combined galvanic and faradic current that contracts seventy-two times to a minute, synchronous with the heart-beat; and I regard this as an aid in the effect. It is known that contraction of the muscle can be obtained by means of an electric current when none can be obtained by the will; hence, this is a valuable means of retaining and developing the muscle fiber until it comes under the guidance of the mind.

Although many differences of opinion prevail as to the application of the sponge electrodes, I am in the habit of applying them at the origin and insertion of the muscle or muscle-groups involved, always laying stress on the importance of approximating the origin and insertion of the muscle as nearly as possible. For instance, in treating the peroneal group, these muscles being most frequently involved, one sponge is placed over the middle third of the outer side of the fibula, the foot flexed as much above a right angle as possible and the other sponge applied over the insertion of these muscles on the outer side of the foot. In this way, the bellies of the muscles are relaxed and a contraction is made more easily.

I believe that much foolish stress has been laid on the reaction of degeneration and I wish to prove, from a large practical experience, how deceptive it may be. It is said that a failure to obtain a muscle contraction by a galvanic or faradic current is an evidence of degeneration of the muscle fiber and that no improvement can be looked for in this paralyzed condition in the future. Do we fail to obtain a contraction in most cases? No! We find that the cutaneous surface will not tolerate the pain of the current and we must desist before contraction takes place, for most of the cases occur in children under 5 years of age, who see no reason for enduring the electrical pain. This is even true in other cases, when the age of the patient and his cutaneous tolerance are greater; the strong current may give no reaction and still reappearance of function may occur. Hoffa always cut down on the muscle to determine its character.

The strength of the currents used should be the weakest that will produce a contraction, and it is never to be used after contraction of the muscle ceases, nor longer than from two to three minutes on any particular muscle group, or from six to twelve minutes on the body at one seance. If this method is followed the child will not cry from pain, or have its nervous system upset by too long-continued electric treatment. I regret to state that the worst results seen by me have been in children of physicians who have had an excess of treatment; that is electricity given from one half an hour to an hour daily has inhibited the recovery and eaten up, as it were, all of Nature's element of repair.

Strychnin may be given internally or a solution used on a sponge and introduced locally, to increase the contraction of the muscle fibers.

Fig. 4.—Case 4. After three months' treatment, able to stand alone with braces.

Fig. 5.—Case 4. Patient can lift leg at an equal angle or right angle.

Fig. 6.—Case 4. Patient can lift right leg to right angle.

MASSAGE

Dr. Benjamin Lee[1] says: "In the essential paralysis of infancy, truly wonderful results are obtained by massage." Massage treatment should be entered on the moment the acute inflammatory symptoms have disappeared and be continued daily in the face of seeming absolute ineffectiveness, for weeks and even months. Cases in which no improvement can be detected for long periods often suddenly begin to improve and progress with great rapidity.

The effect of massage may be classified as follows: mechanical, reflex, thermal, electrical.

1. Lee, Benjamin: Hare's System of Practical Therapeutics, II, p. 321.

1. The mechanical effects are by far the most important, but the others should not be overlooked or forgotten. They consist of the interchanging of cell contents under the influence of alternate pressure and relaxation; a quickened movement of the blood in the capillaries, especially in the muscular tissue; increased activity in the movement of the areolar fluid; acceleration of the currents of both blood and lymph in their respective channels.

2. The reflex or purely nervous effects of massage are obtained by light stroking and percussion. The former produces results which can only be explained on the supposition that it acts as a stimulant to the reflex system of nerves, the force used not being sufficient to account for any change on the mechanical theory.

3. The thermal effects of massage and movements are almost too apparent to need scientific demonstration; everyone is familiar with the fact that both muscular contraction in the form of ordinary exercise and simple friction develop bodily heat in a striking degree. Dr. Weir Mitchell, in his essay on "Fat, Blood and How to Obtain Them," notes (what has been observed by many others) that he has frequently seen the strangely cold limbs of children suffering with infantile paralysis gain from 6 to 10 degrees F. during the massage.

4. The electric effect of massage results partly from the development of the surface heat, partly from the surface friction, partly from the attrition of the muscular fibers and cells, and partly from the nerve stimulation and chemical action.

Graham observes that muscles give a much more ready, vigorous and agreeable response to the will and to the faradic current after massage than they did before.

A child suffering from infantile paralysis was introduced; the affected limb having a surface temperature of 70 F., the poles of a battery were applied to a limb, and 11 milliamperes were required to produce muscular contraction; the limb was then massaged and the temperature was found to have risen to 95 F.; the poles being applied at the same points, contractions followed the employment of only 5 milliamperes. It is evident, therefore, that massage diminishes the resistance of the tissues to the electrical current and increases the electrical contractibility of the muscles.

Fig. 7.—Case 4. Patient bearing weight on braces.

Fig. 8.—Case 5. After one year of massage, electricity and muscle education, patient is able to walk with almost normal gait.

As some men prominent in orthopedics and neurology have condemned the use of electricity and massage, I have taken one of the most recent articles, as illustrative of this side of the subject; that is, Dr. Henry Ling Taylor[2] says: "The conventional treatment by electricity and massage is completely ineffectual." To support this position, he continues: "This was publicly acknowledged to Dr. Bernard Sachs of New York, a distinguished neurologist, etc., and chairman of the Collective Investigation Committee of the New York epidemic of 1907, at the Congress of American Physicians and Surgeons, at Washington, May 10, 1910. In these words he spoke of electricity and massage: 'I consider that the time given to massage and electricity, in these cases, is time wasted. I cannot see that these same methods do any definite good.'"

2. Taylor, Henry Ling: Med. Rec., Oct. 15, 1910, p. 660.

It is true that Dr. Sachs made the preceding statement in May, 1910, as I was present at the time; but five months later, on Oct. 24, 1910, at the New York Academy of Medicine, Dr. Sachs,[3] in discussing this subject, spoke of electricity and massage in the highest terms, as he had previously done, thus showing that a man of the highest standing, from a later and more comprehensive knowledge of the subject, completely changed his views of the value of electricity and massage—a striking illustration of the old adage, "Wise men change their minds."

Dr. Taylor's unconscious accord with this view is shown on the next page in his own article, where he speaks in the highest terms of vibration (which is a simple mechanical massage) and active and passive movements (which have always been classed under Swedish massage).

The abuse of treatment is found in prolonged massage. Children who receive an hour or more treatment daily cannot improve in the face of such a physical tax. I have seen many cases in which the overtreatment has deterred the progress of recovery. Fifteen to twenty minutes is sufficient treatment to administer daily.

HYDROTHERAPEUTICS

The use of the bath, whereby we may float the limbs and aid motion, is a valuable adjunct in treatment. I wish to draw attention to the value of immersion of the affected limb in warm water from 95 F. to 102 F. for twenty minutes each night, in which we find that the

3. Sachs, Bernard: Treatment from the Neurologist's Viewpoint, in a Symposium on the Treatment of Acute Anterior Poliomyelitis, THE JOURNAL A. M. A., Oct. 22, 1910, p. 1465.

62½-pound pressure of the water when removed to the atmospheric pressure of 15 pounds to the square inch results in a dilatation which, together with the heat absorbed, produces an effect on the trophic centers and improves the temperature and growth of the limb. The paralyzed limb retains this heat for hours.

MUSCLE EDUCATION

Finally, I wish to call attention to a class of active and passive exercises done before a mirror, having the patient concentrate his mind on the affected muscles. When the origin and insertion cannot be approximated by an effort of the will, the attendant aids in the effort.

After a time it is found that the motion may be brought under the control of the will. It is known that when motion is guided by mental concentration, the sulci in the gray convolution in the brain presiding over this motor area are increased, as well as the caliber of the nerve going from the cortex to the periphery. It has been demonstrated by Anderson, of Yale, and others, that when a person is securely placed on a body balance and concentrates his mind on an extremity, the hyperemia thus produced tips the body balance in the direction of this limb.

Fig. 9.—Case 6. Recovery after 20 years' daily treatment, massage and electricity by motion.

Figs. 10 and 11.—Case 7. Result of severe attack of infantile paralysis.

A moment's thought makes clear the fact that the nerve efficiency or nervous control as displayed by the gyrations of the nautch dancer can be developed by any person in any set of muscles if a proper effort is made for development of sufficient nerve force and nerve control. The stimulus transmitted from the brain to the periphery depends on the caliber of the conducting nerves, as the diameter of copper wire regulates the volume of electric current capable of transmission. We must now realize that the concentration of the mind on the muscular effort not only initiates the movement, but also determines blood to the controlling nerve centers, producing growth and development in the conducting filaments.

In this treatment of infantile paralysis, in addition to the application of massage, the treatment by the galvanic, faradic, sinusoidal, and high-frequency electrical current, in children over 3 years of age, a course of muscle education before a mirror is added, which I regard as one of the most important in its treatment, because recovery is best brought about by the action of the will, influencing action after massage and electricity have brought the muscle under the control of the mind.

The muscles most frequently involved in infantile paralysis are the peroneal group, and the plan of exercising one set of muscles can be utilized in another set of muscles involved. Placing the child in a chair before a mirror in a comfortable position, I first approximate the origin insertion of this muscle group by bringing the foot up to a right angle with the leg, and then urge the child to aid in bringing up the little-toe side of the foot through an arc of about 30 degrees. If the muscle contraction is such that the child cannot do this alone, the instructor places one hand on the knee to keep the leg in the position, and places the other hand under the foot, which greatly aids the efforts of the child in producing the required contraction. This should be repeated several times, but not to the point of overtiring these weakened muscles. Each set of muscles should be contracted in a similar manner. If the motion cannot be brought about, still the mental effort should be made for the attainment of this action.

To realize how efficient this method is, I wish to state that through this, combined with other treatment, I have been able to show at medical meetings some forty-three patients practically cured, who were unable to walk for periods extending from nine months to four years, having received some form of treatment during this time by other physicians, and having been referred to the Hospital for Deformities and Joint Diseases by such able observers as Kerley, Koplik, Mandl and many others.

It has been learned from necropsy that when areas in the brain have been destroyed by tumor or cysts, the function for this area has continued, and by the decussation of the nerves other areas in the brain have taken up the function. I am of the opinion that in cases in which recovery has taken place in paralysis, after a few years, the motor conduction from the brain to the periphery has been conducted through other motor tracts in a new circuit, passing around the damaged area in the cord.

REPORTS OF CASES

CASE 1.—Gertrude G., aged 6, normal delivery; previous history not pertinent. I was called by Dr. Brainglass to confirm his diagnosis of infantile paralysis on June 13, 1910. Sister of the patient had also had the disease. When I saw this child both legs were involved; the paralysis extended up the spine, and seemed to be of the progressive type. Hoping to stay the advance of the paralysis and expedite a recovery, having explained to the doctor the benefit I hoped to obtain by the d'Arsonval current, and receiving the concurrence of the family, I had the child removed to the Hospital for Deformities and Joint Diseases, where, after the first two days' treatment with high-frequency current along the spine, a marked improvement in the child's condition was shown. This treatment was kept up and combined with the other treatment of massage and electricity as herein described.

The child has made an almost perfect recovery; can bear her weight and hop on either leg, and walks with a normal gait. Several other patients have been thus treated.

The following case is shown to correct two long-standing fallacies: one, that no improvement will occur, whether spontaneous or under treatment, after one year; the other, that after failure to react to either the galvanic or faradic current, known as the reaction of degeneration, no improvement can be looked for.

CASE 2.—Frank S., boy, aged 16, when 1½ years old had an attack of infantile paralysis involving his face and right arm. Fourteen years after this attack he appeared at the hospital hoping to receive treatment that would improve the condition of his face. The right side of his face was paralyzed, and he could not close his right eye in the least. He was turned over to Dr. Charles Rosenheck, who had had five years' experience at the Roosevelt Hospital Dispensary, under Dr. Starr (department of neurologic diseases), and who reported to me that he was satisfied that his reaction of degeneration was such as to be beyond all hope of the slightest benefit. I requested the other members of the staff to confirm this condition, as I wished to see if, after the lapse of fourteen years, with a positive reaction of degeneration, any improvement could take place. The improvement was so great after being under constant treatment for six months (the boy being able to close eye and produce wrinkles in his forehead, with a return to the normal outline of the affected side of his face) that he was shown at the pediatric, neurologic and orthopedic sections of the Academy of Medicine of New York City.

Many other similar cases have been encountered.

CASE 3.—This patient was referred to the hospital by Dr. Koplik, seven months after initial paralysis. When admitted, all the muscles were flaccid; child had no use of arms or legs; all muscles of respiration, including diaphragm and muscles of neck, were involved.

Under massage and electricity, the muscles of both legs have regained their normal function; nearly all function has returned to the left arm; function of the right deltoid is absent, but the trapezius and flexors of the hand have regained their function. There has been some atrophy of the pectorals and apparently some of the intercostal muscles, as shown in the picture.

When the child was admitted to the hospital we looked forward to obtain a necropsy. The extreme condition of this child makes the amount of recovery almost remarkable.

The following case represents a type of recovery partial in the one leg, with promise of a flail leg in the other:

CASE 4.—Paul E. was seen in consultation and referred by Dr. Charles G. Kerley on Oct. 16, 1910. No spontaneous resolution had taken place in the right leg, and apparently from his muscular condition he gave no promise of improvement, while the other leg had very little ability to perform the normal motions, much less bear his weight.

The child had been ill since the end of July, 1910, with no spontaneous resolution; very little was looked for in the way of improvement. With Dr. Kerley's concurrence, the patient was removed to the hospital. As shown in the picture, after three months' treatment, he is able to stand alone in braces; is able to lift both limbs, at an equal or right angle; bear the additional weight of the braces, and I am looking for progressive improvement.

CASE 5.—Arthur H., after initial attack, received four months' treatment at one clinic, eight months' treatment at another clinic, and on going to the third clinic, an operation for fixing the foot and ankle was suggested, as apparently there was extensive atrophy and no function.

At that time the patient's mother met the mother of another patient, who had had her child for treatment at the second institution for three years, with no ability to stand or walk, and who informed Mrs. H. that under treatment at the Hospital for Deformities and Joint Diseases for five months the child was able to walk without braces. Mrs. H., regarding this as an absurdity, made a special visit to this child's home, and seeing what she regarded as a miracle, brought her own child to the hospital.

Figs. 12 and 13.—Case 7, showing improvement after one year's treatment. Treatment by traction on extremities and head with daily electricity and massage to muscles.

This child was under treatment for seven months before he gained any promise of bearing his weight on his right leg, and after one year he is able to walk with almost normal gait.

The following case is shown to illustrate how massage and electricity, carried out by the parents alone, has won success, when many prominent physicians, who were consulted from time to time, made the darkest prognosis, with no promise of the use of either limb:

CASE 6.—Olive B., when 1½ years of age had an attack of infantile paralysis, with both limbs involved; patient was not able to bear her weight on either limb for two years. During this time, various physicians were consulted, and the mother was told that the case was hopeless. At the advice of an old physician, the mother herself purchased a battery and gave the child massage and electricity. At a later time, braces were ordered by institutions and applied, but as the mother thought that this did not aid in the recovery, they were discarded.

Nevertheless, the mother proceeded in the massage and electricity, keeping up the treatment almost daily for twenty years. The girl is now 24 years of age, has no difference in the length of her legs, but the right foot is 1½ inches shorter than the left. She is just recovering from a corrective operation on this right foot.

I am particularly pleased to demonstrate through this case how much can be done through the affectionate perseverance of a parent, recognizing the improvement derived from the treatment, in opposition to the advice of many physicians that she consulted, also the advice she received in a number of institutions.

CASE 7.—M. T., referred to the hospital by Dr. Reginald H. Sayre, who took the original photographs, suffered from a severe attack of infantile paralysis in the epidemic of 1907. The original diagnosis, from pain, was regarded as one of rheumatism, and this diagnosis was confirmed by consultants. Her total paralysis was not noticed until two weeks after the original attack. After six months she was referred to an orthopedic specialist and she journeyed from Yonkers to New York once a week to receive treatment, which consisted of electricity. The journey back and forth completely exhausted her for twenty-four hours.

Fig. 14.—Case 8. Total paralysis 1½ years; recovery after 6 months' treatment with electricity, massage, etc.

The curvature in her back became so pronounced that a brace was applied. The deformity progressing, another consultation with a second orthopedic surgeon was requested. As a result of this consultation a Calot jacket was applied; she was also wearing a brace on her right foot. No improvement was noticed.

Consultation with a third orthopedist was sought. This orthopedist endorsed the treatment as conducted.

In September, 1909, she was seen in consultation by Dr. R. H. Sayre. Her condition then is shown in Figures 10 and 11. Since her case was regarded as one that should receive aggressive treatment, she was turned over to me, at the hospital, where for three months traction was made on her extremities and head, with daily electricity and massage to her weakened muscles. This was followed by a plaster jacket and jury-mast.

Photographs taken one year later, as shown in Figures 12 and 13, show marked improvement, also demonstrate the fact, not accepted by many orthopedists, that in rotary lateral curvature, with bony deformity, much improvement can take place. A line drawn from the left nipple in the front, or from the angle of the scapula in the back, or following the crease of buttocks up, will bring out the change that has taken place.

Since these photographs have been taken, the patient has made decided improvement, but objects to having another photograph taken.

CASE 8.—John D. R.: After a total paralysis lasting one and a half years, under the methods herein described, the patient obtained control of his legs and arms and is now able to get about, after four months' treatment.

CASE 9.—George and Richard C., brothers, were afflicted with infantile paralysis during the summer of 1911 while in an isolated home at Glen Summit in the Pennsylvania mountains. The cases were referred to me by Dr. Charles Gilmore Kerley of New York. Richard, having a milder attack, made almost perfect recovery except the anterior and posterior tibialis, and peroneal in one leg. George had paralysis involving all the muscles of his body, and including thorax and vocal cords. One could distinguish his voice only by placing the ear to his mouth.

I am simply reporting this case to show that treatment continued for several years will bring about progressive improvement, for since the paralysis, the patient has gradually regained control of one group of muscles after the other, and although he still has light braces to aid his leg motions, he is able to go about without them.

The case also demonstrates the danger of permitting nurses and others not familiar with the care of these cases and the value of confining their efforts to the weaker muscles, to instruct the patient in the general setting-up exercises. For a period of over two years, George gave no evidence of spinal curvature or rotation. The case was turned over to a nurse who devoted her efforts to develop both sides, with the results that the stronger side was developed so much quicker than the weaker side that after a period of a few months a very decided lateral curvature was developed, which it will be difficult to correct.

CASE 10.—Harry H., patient of Dr. Eagen of Brooklyn, had infantile paralysis involving all the muscles of the body, and under treatment of massage and electricity, made a perfect recovery of his arms and legs. His erector spinae muscles were so extensively involved that a right high dorsal lateral curvature developed. Under special care by devoting all the efforts to the weaker muscles, by electricity, massage and more particularly muscle education, this lateral curvature has been corrected.

I am simply calling attention to the preceding case to show that when all efforts are directed toward the weaker muscles and the stronger ones are allowed to atrophy, a muscle balance can be developed, but when bilateral exercises are attempted we have deformity in the limbs and lateral curvature develops in cases in which the spinal muscles are involved.

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THE PRACTICAL IMPORTANCE OF INFANTILE KIDNEY IN RENAL DIAGNOSIS *

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The different varieties of kidney anomalies have been so thoroughly catalogued, and the classification so often repeated by various authorities, that the profession has come to be more or less conversant with their existence.

We wish to describe here a type of kidney not usually included in these classifications, which, when present, is of vital importance to the surgeon, as it may easily pass unrecognized if ordinary methods of examination are used. The particular anomaly to which we refer is the condition in which a large, hypertrophied kidney exists on one side and an infantile kidney on the other, the

* From the Genito-Urinary clinic of the Johns Hopkins Hospital.

urine from the deficient kidney, with all chemical and microscopic methods of diagnosis, appearing entirely normal. The concentrating power of the kidney is also normal. The quantity of urine secreted, however, is so small and the function so decreased, that this kidney alone may be insufficient for life. On examination, the kidney is normal in shape, color and consistency. On section, the general architecture is normal and microscopic examination shows normal tubules and glomeruli. It differs from the normal kidney in its diminutive size

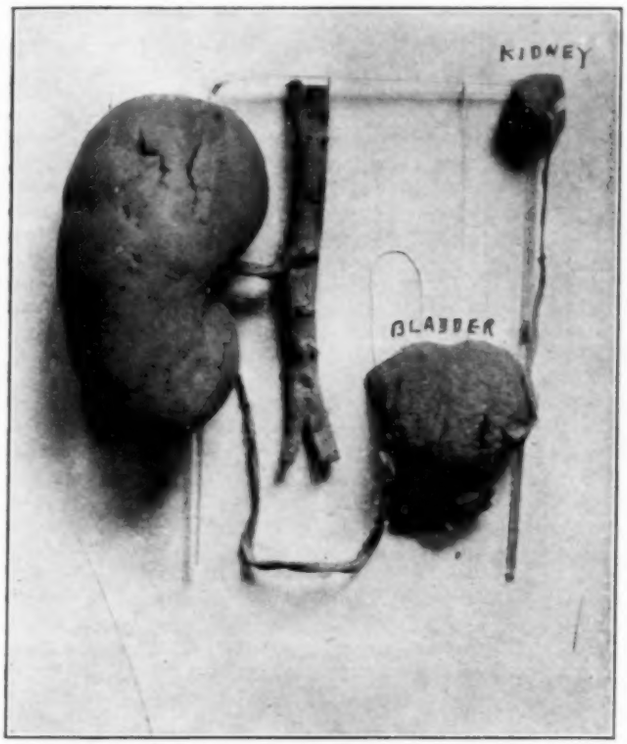

Fig. 1.—This kidney is an example of hypoplasia and the picture is inserted to show the contrast between hypoplasia and the infantile type.

only. While a search of the literature reveals a comparatively small number of cases in which nephrectomy has been performed unwittingly on the larger kidney with disastrous results, the condition is, nevertheless, probably much more common than the number of reported cases would indicate.

Papin, in a very complete consideration of all possible kidney malformations, mentions briefly the type of organ to which reference is here made. He describes such an organ as secreting a urine, normal in every respect, except that the amount is very small. He mentions specifically that such a kidney may even have a high urea concentration. L. L. McArthur[1] reports a case in which he had performed nephrectomy for tuberculosis, which was followed by death from renal insufficiency and at necropsy a kidney, which he terms "infantile," was discovered. The ureters in this case had been catheterized previously and a perfectly clear, apparently normal urine obtained from the insufficient kidney. He also expresses the evident hopelessness of being able to diagnose this condition before operation.

The frequency in general of kidneys atrophic through various causes is seen from a study of 3,940 necropsies from the pathologic department of the Johns Hopkins Hospital. Among this number thirty-six cases of atrophy from various causes were found. Of these only six were unilateral, and of these six three belonged to the infantile type to be described. In this tabulation the moderate bilateral diminution in size found in some cases as a result of chronic nephritis was naturally omitted.

A study of statistics shows that there is excessively small probability of a person having only one kidney, the result of congenital absence or non-development. There is much greater risk of meeting with a deficient kidney of the infantile type. None of the statistics take into account those congenitally small or atrophied kidneys which weigh from 1 to 1½ ounces and which may possess some though not a full amount of glandular substance. Congenital aplasia and hypoplasia of extreme degree are practically the only types which are considered in the various classifications.

The material on which this study is based comprises three cases, obtained at necropsy in the pathologic department of the Johns Hopkins Hospital, one case from the Hunterian laboratory, two cases in which the condition was discovered at the operating table, and two cases diagnosed clinically as anomalies of this type.

Following is a description of the material on which our studies are based:

CASE 1.—Cat. In some experiments to determine how quickly the remaining kidney could take up the total function after nephrectomy, it was noted that the amount of urine decreased at once and the function dropped to one-fifth the previous amount, as tested by phenolsulphonephthalein.[2] This result was strikingly different from that in other experiments previously done, in which the remaining kidney almost immediately assumed a function equal to that of the two kidneys. The cause of the great decrease in function was revealed later by finding an extremely small kidney, which weighed only 6.4 gm. The kidney first removed weighed 26.4 gm. A careful microscopic and chemical examination of the urine from the small kidney revealed no abnormality.

The left kidney, the larger, measures 4 by 3.5 by 2.5 cm. The right kidney, the smaller, measures 2 by 2 by 1.25 cm. The capsules of the kidneys strip readily, leaving a smooth surface, on which nothing abnormal is to be seen. On section, the three zones of the kidney may be made out readily. The

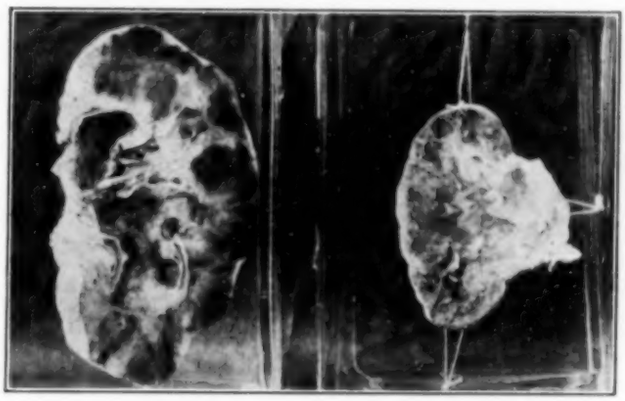

Fig. 2.—This is a kidney of the true infantile type. The section includes the lateral wall of the pelvis which gives the kidney the appearance of being hydronephrotic. It is unfortunate that the pyramids do not show in the photograph. With the naked eye the kidney is in every way normal.

cortex, in the large kidney, measures 5 mm., and in the small kidney 2 mm., and nothing abnormal is to be seen in either case. Microscopically, the large kidney shows a histologic picture characteristic of the normally hypertrophied kidney. In

1. McArthur, L. L.: Surg., Gynec. and Obst., 1911, xii, 391.

2. Rowntree, L. G., and Geraghty, J. T.: The Phthalein Test; An Experimental and Clinical Study of Phenolsulphonephthalein in Relation to Renal Function in Health and Disease, Arch. Int. Med., March, 1912, p. 284.

the small kidney, the picture is quite different. Definite scars may be seen, radiating from the arcuate vessels to the surface. These scars appear to be associated with the interlobular blood-vessels. In the scarred areas the tubules are atrophic or entirely gone, while here and there hyaline glomeruli may be seen. In the intervening spaces, both the uriniferous tubules and the glomeruli are normal in appearance.

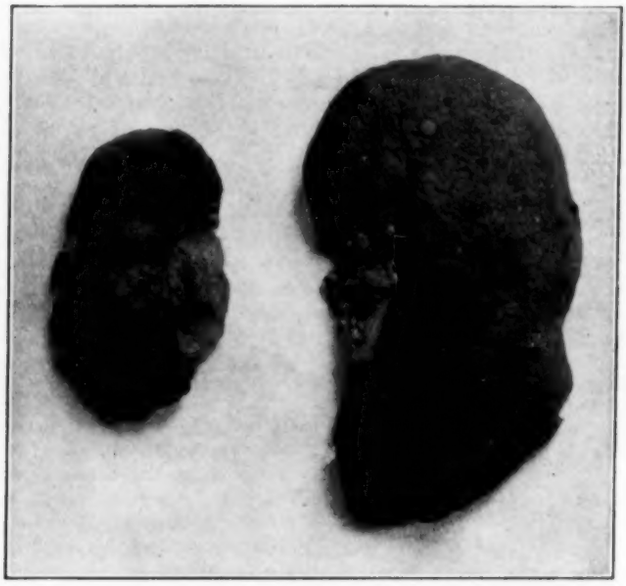

Fig. 3.—These are the kidneys described under Case 3.

CASE 2 (Fig. 1).—Specimen in the Pathological Museum of the Johns Hopkins Hospital. The right kidney is enormously enlarged and measures 15 by 8 by 6 cm. The left kidney is extremely small and measures 3.5 by 2 by 0.75 cm. The capsules of both kidneys strip quite readily, leaving smooth surfaces. On section, the right kidney, aside from the huge size, shows nothing abnormal. The left kidney is very minute, and on section the architecture is partially obscured. Microscopically, sections from the right kidney show the usual findings in a kidney that has undergone compensatory hypertrophy.

Sections from the left kidney show that there is a minute amount of cortical tissue and only a few glomeruli are present. The glomeruli that are present, however, are large and normal. Associated with these glomeruli, and usually in their vicinity, are a number of normal convoluted tubules. The great mass of the kidney is composed of tubules, which look more like collecting than convoluted tubules.

CASE 3. (Fig. 2).—*Diagnosis.*—Stricture of the left ureter and hydronephrosis of the left kidney; infantile kidney on the right.

M. T., woman, aged 48, admitted to the gynecological department of the Johns Hopkins Hospital (service Dr. H. A. Kelly), Nov. 13, 1912, with a history of attacks of pain in the left kidney region, accompanied by hematuria.

Examination showed a stricture at the lower end of the left ureter. The bladder urine was normal. Cystoscopic examination showed both ureteral orifices normally placed and normally functioning, the urine being perfectly clear. The patient refused treatment and left the hospital. Readmitted May 7, 1913, suffering with severe, acute nephritis, from which she died.

Necropsy No. 3935. The left kidney weighs 140 gm., and measures 10.5 by 5 by 3.5 cm.; the capsule strips readily and the surface shows a definite infarction and some small hemorrhages. The cortex varies from 1 to 2 mm. in width. On cross-section, the pelvis is markedly dilated, the dilatation involving the parenchyma and causing some pressure atrophy. The hydronephrosis was a result of adhesions (peri-ureteral) in the lower portion. The gross picture of an acute nephritis is also present.

The right kidney weighs 40 gm. and measures 5 by 2.75 by 1.25 cm. The cortex is 3 mm. in thickness. On gross examination, this kidney is apparently perfectly normal except for the changes, resulting from the acute nephritis present.

On microscopic examination the left kidney shows the usual picture of acute hemorrhagic nephritis, with added interstitial changes, the result of pressure atrophy. The right kidney, with the exception of the changes due to the acute nephritis, presents a picture of kidney tissue, normal in structure and architecture.

CASE 4. (Fig. 3).—*Diagnosis.*—Chronic diffuse nephritis of left kidney; hydronephrosis and chronic nephritis in an infantile kidney on the right.

W. W., man, aged 70. Admitted Nov. 17, 1912, to Johns Hopkins Hospital, with hypertrophy of prostate. Death resulted from hemorrhage following prostatectomy.

Necropsy.—Right kidney measures 7 by 2.5 by 2.75 cm., and weighs 40 gm. The capsule strips readily, leaving a granular surface. Cortex is irregular in width, varying from 1 to 4 mm. The pelvis of the kidney is moderately dilated, but the papilli are not flattened. Microscopic section shows a moderate grade of chronic, diffuse nephritis, with a well-marked arteriosclerosis. The glomeruli are unimpaired, and the tubules are not replaced by fibrous tissue. The pathologic changes present in this kidney would not explain the diminutive size of the organ.

The left kidney measures 11 by 6.5 by 4 cm.; weight 180 gm. The capsule strips readily, leaving a granular surface. The cortex is irregular in depth and the pyramidal portion shows a definite increase in gray, translucent connective tissue. The pelvis is moderately dilated. The microscopic picture shows lesions similar to those on the opposite side.

Both of these kidneys are the seat of a typical, moderate grade arteriosclerosis, and the process is of about equal grade in each kidney.

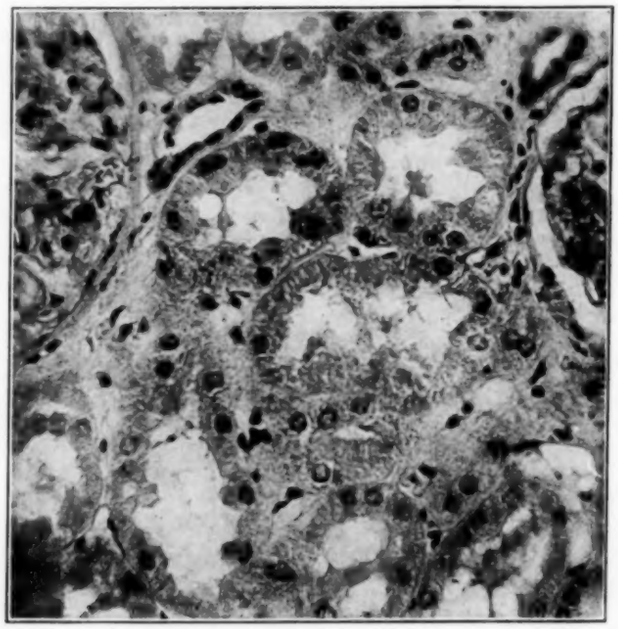

Fig. 4.—Microscopic section in Case 5.

CASE 5. (Fig. 4).—*Diagnosis.*—Hypertrophy of left kidney; tuberculosis in an infantile right kidney.

T. C., man, aged 39. Admitted to Johns Hopkins Hospital May 16, 1910. The left ureter was readily catheterized, but on account of ulceration of the right ureteral orifice it was impossible to pass a catheter and the urine was collected transvesically for a period of one hour.

Results of examination:

RIGHT KIDNEY	LEFT KIDNEY
20 c.c.	40 c.c.
Cloudy.	Clear.
Microscopic pus and tubercle bacilli.	Microscopically negative.
Specific gravity, 1.016.	Specific gravity, 1.020.
Urea, 1.7 per cent.	Urea, 2.8 per cent.
Phenolsulphonephthalein, approximate time, eighteen minutes.	Phenolsulphonephthalein, approximate time, four minutes.
Excretion, a trace.	Excretion, 44.4 per cent.

At operation a small right kidney was found and removed by Dr. H. H. Young. The kidney measured 7 by 2.5 by 3.5 cm., and weighed 40 gm. The surface appeared normal, capsule was not adherent and the color was good. On palpation, the upper third seemed softer than usual, but the consistency of the remainder of the organ was firm. On section, the upper third of the kidney showed well-marked tuberculosis, between the pyramids and the cortex, with small cavity formations. The macroscopic appearance of the lower two-thirds is normal.

Microscopic examination of the kidney tissue in the lower two-thirds shows a slight diffuse increase in connective tissue, manifest about the glomerular capsule. The tubular epithelium is somewhat swollen and the general architecture is slightly blurred. In the non-tuberculous portion the pathologic changes present are extremely minute.

It is very evident that if, in this case, the disease had been in the hypertrophied left kidney, instead of in the infantile kidney, nephrectomy, if performed, would probably have resulted in death. The deficiency in this right kidney could not have been recognized, except through a functional estimation.

CASE 6.—*Diagnosis.*—Tuberculosis of the right kidney; infantile left kidney.

W. B. S., man, aged 30. Admitted to the Church Home and Infirmary February, 1911, with a history of urinary symptoms of two years' duration. Tubercle bacilli were demonstrated in the urine. The prostate, seminal vesicles and epididymes were normal. The bladder was so contracted that ureteral catheterization was unsuccessful. The total renal function, estimated by phenolsulphonephthalein, showed an excretion of 36 per cent. for one hour. The definite reduction in the total function suggested the possibility of a bilateral lesion. A double exploratory operation was advised. The left kidney was first exposed, and discovered to be about one-fourth the size of a normal kidney. In every other respect the organ seemed normal. There were no perirenal adhesions; the surface was smooth and the consistency normal. The ureter showed no thickening or induration suggestive of tuberculosis. In view of the reduced total renal function and the presence of an infantile kidney on the left, it seemed probable that tuberculosis was present on the opposite side. If the hypertrophied right kidney was tuberculous it was also evident that nephrectomy could not be performed, because of the deficient kidney on the left. Consequently, the right kidney was not explored.

The patient was seen again in April, 1913. His general health had been fairly well maintained. The urine was quite cloudy from pus and the total renal function, as estimated by phenolsulphonephthalein, showed an excretion of 25 per cent.

This is a decrease of 11 per cent. since the previous examination. It seems probable that the tuberculous process of the right kidney is causing a decrease of the total function, because of the inability of the left kidney to undergo compensatory hypertrophy.

CASE 7.—*Diagnosis.*—Tuberculosis of the right kidney; infantile left kidney.

Man, aged 27, admitted with urinary symptoms of ten months' duration. Tubercle bacilli were found in the urine. Catheterization of the ureters and estimation of function, the urine being collected for one-half hour, gave the following results:

RIGHT KIDNEY	LEFT KIDNEY
80 c.c.	4 c.c.
Cloudy.	Clear.
Microscopically, pus and many tubercle bacilli.	Microscopically, negative.
Phenolsulphonephthalein, approximate time, five minutes.	Phenolsulphonephthalein, approximate time, ten minutes.
Excretion, 30 per cent. for one-half hour.	Excretion, 8 per cent. for one-half hour.

In order to confirm the preceding findings, catheterization was repeated later with almost identical results. The total function, as estimated by phenolsulphonephthalein, showed an excretion of 35 per cent. for one hour, following intramuscular injection. Examination by Roentgen ray was negative for stone, but showed a kidney shadow in the left side, not quite half so large as the shadow on the right.

The normal character and color of the urine, the small amount secreted on the left side, the relatively high urea concentration and the small kidney shadow make the diagnosis of infantile kidney probable. Furthermore, the right kidney, although definitely tuberculous, still retained a function equal to or even greater than that of a perfectly normal kidney, which indicates that, previous to the onset of disease in this kidney, it was hypertrophic.

CASE 8.—*Diagnosis.*—Double ureter and pelvis with hematuria on right side; infantile kidney on the left side. First seen August, 1912. Following a severe blow over the region of the right kidney the patient noticed blood in his urine which continued up to the time of the examination. The urine is of a distinct wine color, and, on cystoscopic examination, a stream of bloody urine is seen issuing from the right ureter. Catheterization of the ureters was performed and functional estimation made by means of phenolsulphonephthalein, the urine being collected for one-half hour.

Results of examination as follows:

RIGHT KIDNEY	LEFT KIDNEY
Function free and rapid.	Function slow; about one-eighth the amount of that on right.
Bloody.	Clear, good color.
Microscopically, negative, except for red blood-cells.	Microscopically, negative.
Urea, 1.2 per cent.	Urea, 1.2 per cent.
Phenolsulphonephthalein, approximate time, five minutes.	Phenolsulphonephthalein, approximate time, five minutes.
Excretion, 35 per cent. for one-half hour.	Excretion, 4 per cent. for one-half hour.

The preceding examinations were repeated three times, with practically identical findings on each occasion. Pyelography, using 15 per cent. collargol, showed, on the right side, a double ureter extending from the crest of the ilium and ending in two apparently normal pelves rather widely separated. Injection of 7 c.c. into the left kidney pelvis produced definite pain and pyelography showed an irregular, small, indefinite pelvis. Estimation of the total renal function was normal, there being an excretion of 50 per cent. for one hour, following intramuscular injection of phenolsulphonephthalein.

In this case, on the right side, which is the source of the hematuria, there are two separate kidneys, or more probably, a large bifid kidney, which has seven-eighths the total function. On the left side there is a kidney which secretes a urine small in amount, microscopically and chemically normal, and with a high urea concentration, which is equal to that of the right kidney. The function, however, is so low that it is extremely improbable that it could maintain life. The practical importance of recognizing the deficient kidney in this case needs no comment.

Of the eight cases described, a histologic study of the kidneys was made in five. In one case, the kidney was discovered on exploration, but no tissue was obtained for microscopic study. In two of the cases, a clinical diag-

nosis of the condition was made, but no exploratory operation was performed.

A histologic study of the first two cases shows definitely the presence of pathologic changes. Over considerable areas there is an entire absence of tubules and glomeruli, these areas being represented by fibrous tissue. In other areas one finds perfectly normal tubules and glomeruli which could undoubtedly secrete a urine which is normal in general character. The changes present do not seem to be typical of secondary atrophy. The cause of the diminutive size in these two cases lacks definite explanation, although it seems probable that the changes are the result of prenatal disturbance. The kidney in Case 2 approaches true hypoplasia, and does not properly belong to the class of infantile kidneys, but has been included here because the normal tubules and glomeruli present could have secreted a urine normal in character and would offer the same difficulty in diagnosis, commonly present in infantile kidney.

In Case 3, the small kidney was normal in its general architecture, and the histologic changes present were only those of an acute nephritis. This kidney may properly be termed infantile because although the organ is diminutive in size, the architecture is normal.

In Case 4, both kidneys are the seat of a moderate grade of hydronephrosis as the result of back-pressure from the enlarged prostate and there is present also, in equal degree on each side, a moderate grade of chronic diffuse nephritis. The marked difference in the weight and size of the kidneys cannot be explained satisfactorily as being secondary to this evident pathologic process present in each kidney, as the amount of disease present would not explain the marked diminution in size on the right.

It seems probable that this discrepancy in the size of the two kidneys existed before the onset of the present pathologic process, because the left kidney, although the seat of chronic inflammatory changes, has a weight in excess of normal. This enlargement of the left kidney must have occurred before the onset of the present bilateral affection, for a kidney which has present in it a diffuse pathologic process does not undergo compensatory hypertrophy. Here the small kidney belongs to the infantile type and the diminutive size is not the result of secondary atrophy.

In Case 5, the tuberculous process was present in the upper pole, the remainder of the kidney being perfectly normal in architecture and general appearance. This kidney also belongs to the infantile type in that, although diminutive in size, the renal substance is entirely normal, except for occasional minute changes about the glomeruli. The smallness of the organ in this case is not the result of the tuberculous process, but the tuberculosis has occurred in a kidney congenitally small.

These five cases fall into two groups. In the first group, to which Cases 1 and 2 belong, a small kidney is present, which secretes a normal urine, but which is not truly infantile, in that the histology is far from normal. In the other class, under which Cases 3, 4 and 5 are grouped, the kidneys may truly be termed infantile in type. Of course the differentiation between these two types is of comparatively little practical importance to the operating surgeon, as the two present the same element of danger, in that they secrete a normal urine, but are deficient in function.

In two of these cases tuberculosis was present in the large, hypertrophied kidney, and in one the disease occurred in the infantile kidney. In a case like the last mentioned, the presence of this type of kidney cannot be diagnosticated with the present methods of examination. This, however, is of no practical importance. The danger to the surgeon of the infantile type of kidney is well illustrated by these two cases, in which the disease occurred in the larger hypertrophied kidney, and the presence of the deficient kidney on the opposite side can be detected by functional estimation only.

It is rather striking that the four infantile kidneys in which the weight was obtained were, in every instance, one-fourth the weight of the normal kidney. The three kidneys from man each weighed 40 gm. The uniformity in size and weight is noteworthy, and it is possible, that there may be an embryologic explanation of the condition. It seems quite apparent that these kidneys have not the power of compensatory hypertrophy, for with the decreasing function in the hypertrophic kidney, due to disease, there is apparently no attempt on the part of the infantile kidney to make up the deficiency.

CONCLUSIONS

The diagnostic points in determining the presence of a kidney of the type presented above, may be summed up briefly as follows:

1. When disease is present in the larger, hypertrophied kidney, the total function, as estimated by phenolsulphonephthalein, is decreased, and the function of the diseased kidney is usually greater than the function of the supposedly healthy kidney.

2. The function of the infantile kidney shows marked decrease, although the urea percentage and general character of the urine is normal, while the amount of urine secreted is relatively small.

3. Pyelography is of doubtful value, since the size of the kidney pelvis is usually not a reliable index of the size of the kidney.

4. In persons not too stout it may be possible to secure Roentgen-ray shadows, showing the presence of a diminutive kidney. In Case 7 considerable diagnostic help was obtained from the Roentgen ray, which showed a very small kidney shadow, less than half that of the opposite side. This, taken in conjunction with the functional findings and the character of the urine, was of considerable diagnostic aid.

In conclusion, it may be emphasized that kidneys of the infantile type are a menace to the surgeon if the opposite kidney is the seat of the disease. The character of the urine may be normal in appearance and the urea concentration or percentage may be high. The recognition of this anomaly may be extremely difficult, and its presence can be suspected only when function estimations are carried out.

We are greatly indebted to Dr. H. H. Young for the opportunity of studying two of the cases here cited, and to Dr. A. Keidel for the privilege of studying Case 8.

330 North Charles Street.

Presence or Absence of Hydrochloric Acid in Gastric Contents.—It has been the experience of T. Gillman Moorhead (Dublin *Jour. Med. Sc.*, Oct. 1, 1913) that HCl is almost invariably absent in the vomited matter in cases of acute dyspepsia and in many chronic disorders of the stomach; also it is found subsequently to be present in a test meal washed out in the usual way. Frequently vomited matter is intensely acid to litmus paper, but as a rule this will be found due to the presence of organic acids. The explanation is that in acute troubles gastric secretion is presumably inhibited, abnormal fermentation takes place, and hence the absence of HCl and the presence of organic acids.

HELIOTHERAPY WITH SPECIAL REFERENCE TO THE WORK OF DR. ROLLIER AT LEYSIN *

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If we open our school text-books on materia medica and therapeutics we shall rarely find any mention made of the qualities or therapeutic uses of solar energy. We learn the properties and supposed uses of scores of drugs and yet when we enter on practice, we find that our reliable therapeutic armamentarium is really a limited one. Water, fresh air and that most powerful agent of all, solar energy, which is supplied to us everywhere, receive only secondary consideration. The study and use of light, both artificial and solar, however, following the excellent work of Finsen, have come into prominence.

The use of light as a therapeutic agent is very old. C. E. Rogers tells us that some years ago, while traveling in the tropics of Central America, he observed a peculiar custom among some of the Indian tribes. Occasionally he would see one lying naked on the ground for hours at a time in the fierce rays of the midday sun. He learned that this was their method of treating consumption and rheumatism. The custom is an old one, having been practiced before the Spanish invasion and can be traced all along the western coast of the South and North American continents. In the Old World Herodotus as early as 484 B. C. describes the sun-bath, and the Romans built solaria on their houses for the purpose of utilizing the sun's rays. It is then lost sight of therapeutically until toward the end of the eighteenth century, when it was used to treat cancerous ulcerations.

Finsen by his great work established many scientific facts and again brought the subject prominently before the medical profession, and established it as a clinical method. The French school under Bonnet and the surgeons Ollier and Poncet of Lyon observed and reported the good effects of heliotherapy in chronic joint-affections. The application of the method was at this time confined principally to the warm sunny climate along the Mediterranean, until Bernhard of Samaden, Switzerland, began using it on the high plateau of Graubunden. He first treated granulating wounds, and later extended its use to surgical tuberculosis and now gives the following indications for heliotherapy:

I. Wounds: (1) traumatic in which primary healing is not probable as in case of those caused by blasts or crushing injuries; (2) due to circulatory disturbances, as ulcus cruris, mal perforans; (3) burns and frost-bites; (4) infected wounds.

II. Tuberculosis of the skin and serous membrane. Tuberculosis of the lymph-nodes, bones, joints and others.

III. Carcinoma of the skin.

IV. Specific ulcers with little tendency to heal.

V. Leukemia, pseudoleukemia, tuberculosis of larynx and lungs.

In 1903 Rollier established the first sanatorium for the systematic treatment of surgical tuberculosis at Leysin, Switzerland, and since then he has erected two more at the same place, so that he can now accommodate 450 patients. These sanatoriums are located respectively at altitudes of 1250, 1350 and 1500 meters (about 3800, 4100 and 4500 feet). Two hundred beds are reserved for children. It is his work, his method and his results that I wish to review.

* Read by invitation before the Chicago Pediatric Society, May 26, 1913.

Before discussing his technic and results, it may be well to mention some of the properties of light.

Light is a wave-like disturbance which passes out in all directions from a luminous object through an ethereal medium.

Waves of light are not all of the same wave length. The difference in length makes itself known to our eyes as color.

When the sun's rays pass through a prism they are dispersed or decomposed into several kinds of light, and this we call the visible solar spectrum in which it is customary to distinguish seven colors—red, orange, yellow, green, blue, indigo and violet. A sun-ray, therefore, is really a bundle of rays and these individual rays do not occur singly in nature.

The different colors of the spectrum then are due to difference in length of the light-rays. The red are the longest, the violet the shortest. Each light-ray has three properties, namely: (1) heat production, (2) light production, (3) a chemical action. The red rays are principally heat rays. Light is most intense in the yellow. The violet rays have principally a chemical action, and are often called actinic rays. On both sides of the visible spectrum are large fields which are invisible to the eye and therefore called the invisible spectrum, or area of the ultra-red and ultra-violet rays. The different rays of the spectrum and the invisible rays differ as to their absorbability and therefore in their action, as only those rays can produce an effect, which are absorbed.

EFFECT OF LIGHT ON BACTERIA AND THEIR PRODUCTS

Downe and Blunt first showed that sunlight retards and inhibits the growth of bacteria. Dieudonné found that direct sunlight killed typhoid bacilli in one and one-half hours, daylight in eight hours, arc-light (800 candle-power) in eight hours and incandescent light in eleven hours. Arc-light is rich in ultraviolet rays. Tubercle bacilli are killed by the sun's rays in five hours at the seashore; in four hours at an altitude of 2,800 feet, and in three hours at an altitude of 5,000 feet. Diffuse light requires about double the time to produce this effect. This action is principally due to the chemical rays, though all rays have a bactericidal action. The ultraviolet rays also act on the ferments and toxins. Diphtheria toxin quickly loses its toxic property under the influence of these rays, while the antitoxin is less affected by them. Small-pox vaccine is but slightly altered by sunlight or diffuse light, but greatly so by ultraviolet light.

ACTION OF LIGHT ON THE HUMAN BODY

This varies according to the intensity, the altitude and the individual. Sunlight in passing through the atmosphere to the earth loses a great deal of its energy, the loss depending on the position of the sun in the sky, the density of the air strata traversed and the amount of moisture and foreign matter in the air. The chemical rays show the greatest, the heat rays the smallest loss. The light intensity in the higher altitudes is much greater than in the lowlands, and this difference is particularly marked in winter. According to Dorno and Weber, Davos (altitude 5,000 feet) at noon in winter has four times the amount of light that Kiel (sea-level) has, while this difference is only half so great in summer. In about the same manner the volume of the ultraviolet rays increases with the increase in altitude. The difference in the ultraviolet ray's intensity in higher altitude in summer and winter, however, is comparatively small, while in the lowlands it is great. The effect of

light on the body is not as yet fully understood, but we may say when the body is exposed to sunlight for a period of time there results: (1) increased pigmentation; (2) increased growth of hair; (3) increased metabolism; (4) increase in number of erythrocytes; (5) local hyperemia; (6) decrease in number of respirations; (7) increase in depth of individual respiratory act; (8) fall of blood-pressure, and (9) stimulation of nervous system.

Under the influence principally of the ultraviolet rays, pigmentation takes place on those parts of the body exposed. This is as a rule preceded by an erythema of varying intensity, according to the strength of the light. The pigmentation is characterized by an increase of the pigment granules in the epithelial cells, as well as in an increase in the number of chromatophoric cells, which are probably epithelial cells which have migrated into the connective tissue. This pigmentation by some is considered a protective process on the part of the body against the ultraviolet rays. Others hold that it transforms short-waved, chemical rays into long-waved rays, which have a deeper penetration. A combination of the two views is probably more nearly correct. It is very important in practice, as Rollier states that prognosis and rapidity of healing are as a rule proportionate to the degree of pigmentation. This pigment absorbs the violet rays, but not the red.

All rays of light penetrate the human body, the violet or chemical rays possessing this power to a less degree than the heat rays.

Lenkei says that only about a hundredth part of the light falling on the body penetrates it 0.5 cm., but some rays reach a depth of from 5 to 6 cm. That light penetrates the thickness of the hand is proved by the experiments of Oninus. When light penetrates the skin, practically all the chemical rays are absorbed by the blood. This is a striking fact and probably some day will help explain the good results of heliotherapy. When we consider that exposure to light causes a local hyperemia, the amount of energy absorbed by the blood must be enormous. Von Schlaffer has also shown that blood during exposures to light absorbs light energy, which, in the dark, it can again transfer to a photographic plate. Is it not possible, as he says, that it can also surrender this accumulated energy to the internal organs, and thereby influence their function and possibly pathologic processes? Rollier rarely sees acne or furunculosis on pigmented skins, and during an epidemic of German measles noticed that all the well-pigmented children were free from eruption and even in those wearing jackets the eruption only appeared on those parts of the body not exposed to the sun-bath.

TECHNIC OF HELIOTHERAPY AS USED BY DR. ROLLIER

While the French surgeons and even Bernhard of Samaden at first relied principally on local exposures of the parts affected, Rollier considers a general exposure of the body as fundamental and the local exposures as only secondary in importance. The dry, invigorating air of the higher altitudes is also called to assist the solar energy. This it does by increasing the action of the skin, thus aiding elimination, drying up wounds when present and increasing the general tone of the body. The treatment then is really a combination of light and fresh air. When light is not available the air-bath is used alone. According to Saake, mountain air also contains many more radio-active emanations than the air in the lowlands. Furthermore, in higher altitudes the differences in temperature in the shade and in the sun are very great, so that at Leyson when there is snow on the ground, temperatures of 95 to 120 F. in the sun are not uncommon. This allows the treatment to be carried on without interruption in winter, as the patients do not suffer from the cold.

Rollier in his address before the Gesellschaft deutscher Naturforscher and Aerzte in Münster in 1912 says:

> **It is in surgical tuberculosis that we have seen the best results from heliotherapy, and we have made the treatment of it our life work. As a result of my experience in the use of the light-cure in higher altitudes, based on an experience of nine years, I maintain to-day that the cure of surgical tuberculosis in all its forms, in all stages, as well as at every age of life, can be accomplished.**
>
> **The closed surgical tuberculosis always heals, if one will only be patient, and above all if one understands how to keep it closed. To transform a closed tuberculosis into an open one means to increase the gravity of the case a hundredfold. A diminution of the vitality of the tissues is the inevitable consequence. . . . To regard a surgical tuberculosis as a local disease which can be cured by local treatment alone is a ruinous error. On the contrary, it is a general affection which requires general treatment. Of all infectious diseases it is the one in which the individual resistance plays a deciding part. Our first effort therefore is directed to improve general conditions and thus to bring about a healing of the local focus by treatment of the entire system. A rational local treatment is necessary as well, provided it is not too one-sided.**

Patients on arriving at the sanatorium are put to bed for a few days, even those whose local condition does not make this imperative. They are thus allowed to become acclimated to the altitude. After three or five days as a rule, they are pushed out onto the verandas into the sunshine. The head is covered with a white hat or an umbrella, the eyes protected with dark glasses and a white garment worn over the body. On the first day the feet are exposed three times a day for five minutes; on the second day three times ten minutes, and the legs to the knees three times five minutes; on the third day the exposures are increased five minutes three times daily; on the fourth day thighs are included; on the fifth day the arms; on the sixth day the back and on the seventh the abdomen and chest, so that at the end of the first week some parts of the body are exposed for one and one-half hours per day. The exposures are increased five minutes three times daily until the patient gets a full sun-bath for from three to five hours daily. This, as a rule, is the maximum, although some bear the treatment for seven hours. Individualization of course is necessary, and in some instances the scheme of exposures must be modified to suit the case. Pulse and temperature are closely watched and used as an indicator of the patient's tolerance.

By this progressive increase of the time of exposure he avoids an erythema solare, and gradually the body acquires the desired degree of pigmentation which seems to be so essential. The rapidity and degree of pigmentation are as a rule in direct proportion to the power of resistance of the patient. Blonds and especially red blonds who pigment less seem to offer a more unfavorable prognosis.

Nervous patients must be treated carefully as they often complain of headaches and nervous symptoms. These restless, excitable patients receive more air-baths and shorter exposures to the sun, while the fat phlegmatic patients generally bear the sun-baths well.

As the healing of surgical tuberculosis requires rest of the parts affected, all cases except those of the upper

extremities and lymph-nodes must be treated in bed. We must immobilize the parts. It the case of the upper extremities this is done with splints and bandages, which are removed during the exposure period.

Cases of tuberculosis of the hip, spine, lower extremities and peritoneum require immobilization in bed until healed; that is, until long after all pain has ceased and roentgenoscopy shows that the focus is healed. This, however, requires months and often a year or more. It is in cases of long duration particularly that we observe the better effects of treatment carried on in high altitudes over those in lower altitudes, for the former patients owing to the invigorating action of the mountain air, retain a good appetite, and with a good diet often take on weight. Not only that, but an increased tonus of the tissues, especially in children, is frequently seen. At lower altitudes loss of appetite and the depressing action of the heat interfere with the systematic treatment.

Rollier has discarded the use of all non-removable appliances for immobilization as antagonistic to the principles of heliotherapy. By their use, no matter how skilfully made, the activity of the skin is greatly reduced; exposure to sun and air is impossible, metabolism decreases and atrophy results. These factors tend to prevent healing and if healing does take place, the functional result is, in many cases, a poor one. All appliances for immobilization are therefore removed daily during the period of exposure, except occasionally in the case of very refractory children with spondylitis. In these cases he cuts large fenestra into the jackets. In general he applies extension apparatus, splints, bandages and removable corsets of celluloid. In many cases of spondylitis, a corset or jacket made of heavy material, which is in turn fixed to the mattress, is employed. Ambulatory appliances usually made of celluloid, so that they can be removed and treatment continued at home, are used only after the tuberculosis is healed to protect the newly formed bone.

Medication is rarely resorted to; children, however, receive cod-liver oil.

Cold abcesses unless interfering mechanically are given ample time to become absorbed. This occurs in a fair percentage of cases. Under all circumstances the rupture of an abcess is to be prevented, as a mixed infection is practically unavoidable and makes the prognosis so much worse. If necessary, they are aspirated and injected with iodoform, 10 per cent., in oil or glycerin, to guard against mixed infection. This is done even daily if necessary; every means and effort are used to avoid spontaneous rupture. If the patient has or develops a sinus, it is covered, when not exposed to the sun, with an alcohol dressing to prevent infection as much as possible. Sinuses, no matter where located, when exposed to light, first show an increased secretion, then gradually dry up, the granulations become healthy and complete healing is frequently seen. According to Bernhard, the scars resulting are firmer, yet more elastic, than when heliotherapy is not employed, and consequently produce less contraction.

The high fever due to mixed infection drops, large open wounds and ulcerations heal with a minimum of deformity, and thickening of joint capsules and exudates are likewise absorbed in many cases.

Franzoni, an assistant of Rollier, has recently published an interesting article on the behavior of bone sequestra under the influence of light. As a rule from three to five months are required for a sequestrum to form and free itself from the surrounding tissues. Heliotherapy increases the speed of evolution of the sequestrum and causes its spontaneous expulsion. Rapid and firm healing follows. By this method, only the necessary portion of bone is eliminated, and no new wound surfaces are created, as in the case of sequestrotomy. Franzoni has observed that when cloudy days intervene a sequestrum near the surface has retracted deeper into the cavity, to be fully expelled after further exposure to the sun.

The analgesic effect of the sun's rays is seen in almost all cases. In rare cases the symptoms become exacerbated but soon abate, and all cases show a marked lessening and more frequently an absence of pain after a short period of treatment. This, in turn, helps the patient by allowing him plenty of rest and sleep, the exposure to the sun being conducive to sleep itself.

In many cases of joint tuberculosis he finds a far better functional result after the use of heliotherapy than experience with other methods would lead one to expect. This he considers as characteristic of the use of the sun and air treatment! Passive and active movements are not employed.

Bardenheuer, assistant to Rollier, in a study of the blood, gives the following data:

During from the first to the third day of treatment, the red corpuscles usually increase about 500,000, and the white 3,000, the maximum in increase being reached about the third day. The leukocyte count in closed cases runs about 10,000, in cases with mixed infection from 13,000 to 17,000. He has found that cases in which the maximum increase in erythrocytes requires much more than three days are those offering a poorer prognosis. When healing starts there is a slight decrease in the number of erythrocytes.

The application of the treatments to specific seats of the disease is in substance as follows:

TREATMENT IN VARIOUS FORMS OF TUBERCULOSIS

Spondylitis.—These patients are put to bed and immobilized as mentioned before. Children, if they wear a jacket, have a large fenestrum cut anteriorly, as the vertebrae in children are not much further removed from the surface of the abdomen than from the back. A gibbus, if present, is padded with cotton or a pillow, or, more frequently, the patient is placed on the abdomen with a triangular pillow under the chest. This position increases lordosis, and prevents, or when present, decreases the gibbus. After healing is verified by roentgenoscopy, a celluloid corset is worn. These cases require from one to two years.

Coxitis.—An extension is applied in bed and the pelvis is elevated on a pillow, to expose the entire coxofemoral trochanteric region to the sun. At the same time this avoids contractures. Abscesses when not absorbed are aspirated. The treatment requires at least a year, but splendid functional results are obtained.

Lymph-Nodes.—Bronchial lymph-nodes, lymph-nodes of the neck, have yielded beautifully to this treatment. In some cases the lymph-nodes appear spontaneously. In others it becomes necessary to aspirate; but even when there are sinuses the end-results are good, and the scars as a rule less disfiguring than in operative cases, complicated by infection. The treatment is contiued from six months to two years.

Tuberculosis of Peritoneum and Ileocecal Tuberculosis.—Even in these cases, the prognosis as a rule is good. Under the influence of the sun and fresh air, the pain soon subsides, exudates in the abdomen become absorbed; large tumor masses in the ileocecal regions, which were declared inoperable by Roux, disappeared and healing took place.

Genito-Urinary Tuberculosis.—The principal effects of heliotherapy in these sad cases is the lessening of pain and the amelioration of distressing bladder symptoms.

Tuberculosis of the bones of the hands and feet offers an especially good prognosis.

Closed tuberculosis of the pelvic bones is amenable to this treatment, but a mixed infection in cases of sacro-iliac tuberculosis makes the case practically a hopeless one.

Patients with a combined local tuberculosis and tuberculosis of the lungs often show a marked improvement of the condition of the lung. As Rollier, by his method, exposes the thorax last, he has seen no ill effects such as hemoptysis. He says that bad effects such as congestion of the head, nausea, apoplexy, etc., are seen only when the method is improperly used and we fail to individualize.

Rollier's results[1] have attracted attention the world over, and such men as Bardenheuer, von Eiselsberg, Escherich, Kocher and others have written enthusiastically about the work at Leysin. Bardenheuer, who had very radical views on the treatment of surgical tuberculosis, now rarely resorts to a resection. He says, "Resection of a joint is a mutilating operation compared to Rollier's results."

In endeavoring to explain the action of the sun and the air, we encounter difficult problems. Several theories have been advanced. I shall not repeat them, as they are not convincing. We must here again accept the clinical results and content ourselves with empiricism. The pigmentation of the skin, the energy imparted to the blood by the absorption of rays, and the hyperemia of the skin probably all play an important part.

Good results are also seen in cases treated in the lower altitudes, although it often becomes necessary to interrupt the treatment on account of extreme heat or cold. Bardenheuer has reported on thirty-five cases treated at Cologne and is well satisfied with his results. He found that old fistulas, postoperative fistulas and old resections with mixed infections ofter healed promptly after exposure. Furthermore he employed the treatment in cases with multiple lesions which from a surgical point of view offered little hope, and saw complete healing take place, so that to-day he is one of the most ardent advocates of the Rollier treatment.

The principal drawback to the Rollier method or any other method of heliotherapy is, and always will be, the length of time necessary to obtain results, painstaking systematic work extending over months and years being necessary.

We must not lose sight of the fact, however, that when the ordinary orthopedic treatment is carried out a great deal of time is required likewise, and frequently at the end a resection endangering life becomes necessary. Not until sanatoriums are provided and especially places where the poorer class may find aid will heliotherapy be a complete success.

In the United States we have an abundance of places which would fill every requirement. Climate, plenty of sunshine and altitude can be had in Colorado, Arizona, California, New Mexico and in many other states; but in addition to this is required financial aid for institutions and the patients. The action of the states would be important. So much has been said in recent years on the subject of conservation that the matter of conservation of human beings and restoring them to usefulness cannot be foreign to American thought and American economic policies. The expense of bringing those afflicted with surgical tuberculosis back to health would be less than the burden imposed on state and charities in caring for the lifelong cripples created by this disease.

Here in the establishment of sanatoriums along the lines indicated is a field for the action of the state or for a broad charity.

Then, too, we could follow the good advice of Rogers, who says, "The study of solar phenomena and their relation to health and disease should be pursued with interest, and solar energy turned to account in maintaining the one and combating the other."

1. Rollier (Verhandl. d. Gesellsch. f. Kinderheilk. d. 84 Versamml. d. Gesellsch. deutsch. Naturforsch. u. Aerzte in Münster) publishes a report of 650 cases in which 355 patients were adults and 295 children. There were 450 cases of closed surgical tuberculosis and 200 cases of open surgical tuberculosis. In the cases of closed surgical tuberculosis 393 patients were cured, 41 improved, 11 remained stationary, and 5 died. Of the patients with open surgical tuberculosis, 137 were cured, 29 improved, 14 remained stationary, and 20 died.

In the preparation of this article free use has been made of the publications of Rollier, Witmer, Bardenheuer, Jesionek and Franzoni.

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TREATMENT OF LOOSE TEETH DUE TO INFLAMMATORY DEGENERATION OF THE GUMS AND ALVEOLAR PROCESS *

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The disease of pyorrhea alveolaris, in spite of its name, is not always associated with a flow of pus from the infected tooth-sockets. As a matter of fact, pus does not appear in 25 per cent. of the cases. The main symptoms are inflammation of the peridental membrane, bleeding of the gums at the slightest touch and a tendency for the teeth to elongate and be sensitive to mastication. Finally, the gums separate from the roots of the teeth, forming pockets in which salivary calculus and infection cause such centers of irritation and disintegration that the destruction of the teeth involved is only a question of time unless the tartar is removed from the roots, the mass of infection destroyed and the gums stimulated to reattach themselves to the roots of the teeth.

A single blind fistula from an infected root may cause the most profound nervous depression, which, being chronic, will be recognized only by its disappearance with the cure of fistula.

Osler, Goadby, Daland, Hunter and Billings, I believe, have not overstated the bodily ailments that time will show to be directly traced to mouth infections. That mouth infection is, in a great majority of cases, associated with Bright's disease, diabetes, cardiac,

* Read in the Section on Stomatology of the American Medical Association, at the Sixty-Fourth Annual Session, held at Minneapolis, June, 1913.

* Because of lack of space, this article is abbreviated in THE JOURNAL. The complete article appears in the Transactions of the Section and in the author's reprints.

hepatic, renal and stomach disorders has been noted for a long time, but within recent years it has been shown that these disorders are, in many instances, ameliorated and, at times, entirely eradicated by the removal of the infecting foci from the mouth. My experience in the treatment of pyorrhea alveolaris with its associated tooth infections accords with these findings.

The development of medical science has now placed on the dentist not only primarily the repair and restoration of the teeth that they may look well and give efficient power of mastication, but the responsibility of deciding whether or not patients shall be inflicted with a long list of diseases that owe their origin and existence to infections within the teeth and the adjacent tissues. This question of autotoxemia has been a great shock to the prejudice of the medical world at large, but to the dental world, trained more along purely mechanical lines, with little or no bacterial knowledge, the question of autotoxemia is no less than revolutionary. It is as though cabin-boys had suddenly awakened to find that they had been steering the ships of the human fleet, without charts or knowledge of navigation, over rocks, whirlpools and mines, all the time blaming unavoidable fate for the death and disaster, when the wrecks, deaths and disasters were directly caused by their own well-meaning, blundering hands. The medical world at large cannot escape this indictment, but Dentistry, inasmuch as she recommends appliances and fixtures that cannot be cleansed, that obviously may cause and perpetuate toxemia, is overwhelmed by the contemplation of the long lists of preventable diseases and the gruesome toll of deaths that her well-meant efforts may have unwittingly occasioned. The manifestly undisputed fact that the removal of non-cleansable crowns and bridges have caused the rapid disappearance of heart murmurs, violent nervous derangements, duodenal ulcer, anemia, etc., is a convincing proof of what wholesale disease had been caused by the mechanical appliances now generally recommended.

When we come to pyorrhea and pyorrhea pockets, which the great majority of dentists class as incurable, we have come to the great divide, for those dentists who shall control and cure this great scourge shall take their places in the dentistry of the future, and those who neglect this important source of human disease shall be relegated to the spheres of those who unwisely attempted that which they were unfitted to accomplish; for the cure of pyorrhea alveolaris has been more or less successfully accomplished for the last fifteen or twenty years.

While, as previously stated, pyorrhea is associated with various disturbances of which it may be the primal and continuing cause, such as gout, Bright's disease, diabetes and cardiac, hepatic and renal disorders, such specific disease as syphilis, gonorrhea and tuberculosis, by their debilitating effect on the tissues of the mouth, may so lower the vitality of the gums that infections that otherwise would be repudiated, penetrate the peridental membrane and by a subtle toxemia still further depress the general vital forces. This infection having penetrated the gums, forms a small abscess that partly strips away the peridental membrane from the tooth-neck, forming a pocket, which once formed continues the disease even after the general systemic disorder may have been conquered. It is probable that some one of the numerous passing diseases, such as typhoid, measles, grip, or even a bad cold, has temporarily lowered the physical resistance of the gum tissue to the point of permitting the ever-present infection to penetrate and form the self-perpetuating pockets, thus leaving the pyorrhea to continue without apparent systemic cause.

If the systemic cause has passed and the pyorrhea has not created a new one, the disease may perhaps be successfully treated by local means and a permanent cure hoped for; but if the pyorrhea is associated with serious general disorder, local treatment, important as it is, can be held only as a palliative and must be supplemented by judicious systemic treatment. The most important systemic treatment in the cure of pyorrhea consists in the discriminating use of vaccines that will produce antibodies in the blood as supplementary adjuncts to the proper local treatment; and yet, important and valuable as the vaccine treatment unquestionably is, without the proper local treatment that removes infecting foci and stimulates the gums to heal and reattach themselves to the roots, vaccine treatment can only reduce the severity of the symptoms; it cannot effect a cure.

About seven years ago it was my good fortune to discover that commercial hydrofluoric acid would disintegrate tartar with no macroscopic action on either cementum or enamel of an extracted tooth. The poisonous action of this acid precluded its use as a therapeutic agent to be applied to the gums. Through an extensive series of experimentation it was proved that a 23 per cent. solution of ammonium bifluorid (an acid salt of hydrofluoric acid) will disintegrate the tartar on a tooth as readily as hydrofluoric acid itself and also leave the tooth apparently unsoftened. The following is a safe, practical method for its manufacture: Forty c.c. of commercial hydrofluoric acid should be placed in a wax bottle and 27 gm. of chemically pure ammonium carbonate slowly added, a small lump at a time, the bottle being closed after each addition to prevent undue escape of fumes. When this mixture is allowed to rest for twenty-four hours it is ready for use. The temperature of the mixture during manufacture should not exceed 60 degrees Fahrenheit. The solution of ammonium bifluorid thus obtained gives excellent therapeutic results. Any variation in the strength of the acid made by this method seems to be of no importance chemically.

The solution of ammonium bifluorid may be injected once or twice a week into pockets around loose teeth, but care must be taken not to inject it into fresh cuts, as such procedure will cause great pain. The patient should spit without rinsing the mouth with water, the saliva acting as a protection against irritation. After one or two injections the soreness and inflammation will largely disappear, and even the general symptoms of toxemia will sometimes be found to have abated. The tartar scale that could not be easily and painlessly removed at the first two treatments will now tend to be so loosened that its thorough removal by scalers will be easy for both patient and dentist. After four or five applications, one week apart, black scales that have escaped the instruments will sometimes be found floating loose in the pockets, so that they can readily be picked out; finally, the root will become as smooth as velvet to the touch of an instrument. When this stage has been reached it will be found that the scalers cannot be so deeply carried into the pyorrhea pockets as was easily possible in the beginning. To do so causes pain and a free flow of blood. This indicates that new granulations are forming, which should not be ruthlessly broken up either by instrumentation or by injection of the bifluorid into them. Once each week the solution should be allowed to flow gently into the pockets, a procedure which results in continuous healing and is not

productive of pain. Careful exploration for tartar on the root within the pocket is always advisable. Reattachment of the gum to the root, however, can be accepted as assurance that that portion of the root has been thoroughly cleansed. The scaling in that place should then be discontinued, while the weekly applications of the bifluorid alone should be used. If, however, at the end of two or three months any of the pockets have not entirely healed they should be re-explored with scalers and the treatment repeated as for a new case, although by this time most of the original pockets will have disappeared, and where they existed the gums, with a slight contraction at the neck, will be found firmly adherent to the tooth. Teeth that have lost more than half of their gum attachment have become, under this treatment, firm and comfortable to the action of normal mastication.

Let us now consider some of the other means of local treatment in the cure of pyorrhea alveolaris. Loose teeth may be splinted together so as to give immobility, but this should always be done in such a manner as not to prevent thorough cleansing of the gum around their necks. Any malocclusion should be remedied so that loose teeth may be relieved of the excessive pressure of mastication due to thickening of the inflamed peridental membrane. When a pocket has approached an apical foramen near enough to infect the pulp, the pulp should be destroyed and the root canals thoroughly sterilized and filled. This should be especially looked to in the case of molars in which the pocket extends through the bifurcation and down to the tip of one of the roots. It is sometimes excellent practice to cut the crown midway through the grinding surface through the juncture of the roots, finally extracting the diseased root with its side to the crown. This exposes the other root or roots so that they can be filled and cleansed as easily as a bicuspid. With upper molars, if the palatal root is necrosed, this operation is most satisfactory as it leaves the mouth to all appearances unchanged, and works for greater stability and more rapid recovery by not forcing the remaining root or roots to stand more than their fair share of mastication.

An excellent mouth-wash for use at home consists of a saturated aqueous solution of sodium silicofluorid which amounts to a 0.61 per cent. solution. This, when held for a minute in the mouth, morning and evening, and freely swashed for at least a minute through the teeth is a great assistance in relieving inflammation of the gums. Like the bifluorid it seems to restrain the deposition of tartar on the teeth, except in about 1 per cent. of cases, in which it seems to increase it slightly. But even in these cases the gums heal promptly and the superficial deposit is easily removed from the teeth with brush and pumice. The disagreeable flavor of the solution can be disguised by adding an equal amount of sodium chlorid or a judicious quantity of aromatics.

An efficient tooth-powder that will liberate enough free oxygen to make from 40 to 50 drops of a 3 per cent. peroxid solution for every 10 grains used on the brush in the mouth is as follows:

Magnesium peroxid (200 mesh sieve)	60 parts
Sodium perborate	30 parts
Castile soap and flavoring	10 parts

This can be used morning and evening for brushing the teeth and should be swashed around the interstices for a full minute before being ejected from the mouth. Without thorough cleansing and brushing of teeth and gums morning and evening antiseptic washes will, however, be of no avail. Since the tooth-brush cannot cleanse between the teeth these surfaces should be swept free from bacterial deposits with floss-silk morning and evening, and the teeth and gums thoroughly brushed with strokes not less than an inch and a half long, and rotary wherever possible. The brush should be small, not over an inch and a half long, the bristles not over a quarter of an inch, and narrow, so that when the mouth is partly opened the brush can be placed between the ramus of the jaw and the third molars. Most brushing does not extend beyond the spring of the bristles, which instead of giving bristle friction merely pivots the bristles without cleansing. The upper and lower third molars more frequently decay and are subject to pyorrhea alveolaris simply because they are not cleansed. Structurally, they are not weaker than any other teeth. At each visit of a patient it is most essential that the necks of all the teeth be examined for bacterial plaques that may have been accumulating undisturbed since the last visit. The patient should be shown what movements of the brush are necessary for their removal, for a final test of a method of brushing the teeth and gums is, Does it clean away the bacterial plaques? Ninety-nine out of a hundred cleanly people never brush the thick bacterial plaques from their third molars, or, as a matter of fact, from half the other teeth, simply because they have never been taught how. Gums as well as teeth should be thoroughly brushed twice a day of all bacterial plaques. Observation on my patients proves that healthy gums are no more injured by vigorous brushing than is the skin adjacent to the finger-nails. Inflamed soft gums will unquestionably be made sore for the first week or two, but persistence on the part of the patient and assistance on the part of the dentist in touching up the sore spots with silver nitrate will soon strengthen the gums to almost any friction the tooth-brush can give them. The question of vigorous cleansing and massaging the gums with the brush is not only a question of removing external films of infection, but is also for the purpose of producing an auto-inoculation that will create antibodies in the blood for the purpose of combating the disease, a vigorous massage of the parts causing a local hyperemia, which enables the antibodies in the blood to come into more intimate contact with the infecting bacteria. This is a most important phase in the cure of pyorrhea and one that has not been sufficiently emphasized. The formation of antibodies for the cure of pyorrhea is a means of eradicating pyorrhea from the system. The auto-inoculation caused by vigorous gum brushing combined with the judicious use of carefully prepared vaccines have given results of a systemic improvement that are little less than marvelous.

Medical literature is so full of the reports on successful vaccine treatment for mouth infection that they cannot but convince the most skeptical that there must be value in the treatment. Goadby's work in this field is deserving of great credit Cummins[2] has published a recent article on this subject wherein Goadby's methods are followed. The work of Leary and his associates is more in accordance with modern bacteriologic methods, however, and their reports are more in accord with the bacterial findings of this paper.

About two years ago I began the vaccine treatment as an adjunct to my local pyorrhea treatment. I was decidedly skeptical because pyorrhea does not seem to be caused by a specific bacterium, but may be caused by any one of several species, or various combinations of these. Nevertheless, from the very start such increased

2. Cummins, R. C.: Jour. Vaccine Therap., March, 1913, p. 59.

improvement locally and systemically was obtained that the great value of the treatment could not be doubted. The results in almost every case showed a consistent healing of the pockets and a disappearance of infection from the gums. In about 50 per cent. of the cases there was a distinct improvement in the general physical condition, which, as before stated, being chronic was sometimes made more apparent by its absence than its presence. In the forty cases that are used as the basis of this report, the streptococcus, staphylococcus, *Bacillus influenzae*, pneumococcus, *Micrococcus catarrhalis*, diphtheroids, Friedländer bacillus and an occasional unidentified bacterium were used in the vaccines. The *Streptococcus viridans* appeared in about 25 per cent. of the cases. That the vaccines for pyorrhea alveolaris for forty cases contained such a consistent combination of similar germs for so many cases with so comparatively few unidentified strains may be partly due to the method used in collecting the specimens so as to exclude the incidental or extraneous flora of the mouth. My method will now be described.

When the infected area appeared at the tip of a root in which the pulp had died and the root canal had been filled, the culture was always taken through the root canal, which was drilled out with a fine sterilized piano-wire drill until the end was nearly reached. The canal was then sterilized with phenol (carbolic acid), wiped dry with cotton and then blown out with hot air. When this had been accomplished and the tooth had been carefully guarded with a napkin to prevent infection from the mouth, another sterilized drill was passed down to the end and then plunged through the tip into the infected area. This was then streaked over the blood-agar in the ordinary manner. At times, however, the infected area appeared near the tip of a root or roots in which the pulps were alive. In this case the root-canal method of obtaining the specimen was not feasible, so the following method was substituted: The mucous membrane over the indurated infected spot was cocainized and a thin cautery plunged down to the bone. A sterilized bone-drill was then passed through the outer plate of the alveolar process and the patient dismissed for two days. On his return the opening in the gum, on being protected with a napkin, was cauterized with pure phenol and then wiped dry. Then the sterilized point of a small sterilized platinum-pointed glass syringe or platinum spear was inserted into the bony opening made previously by the drill, and a small drop of bloody fluid extracted, which with due care was transferred to the blood-agar medium. This material was supposed to contain the bacteria that had gathered for the purpose of preventing reorganization of the tissues.

To take a specimen from a pyorrhea pocket the following method was used: The neck of the tooth was first carefully washed with 95 per cent. alcohol so as to remove all outside bacteria as much as possible. The tooth was protected from mouth infection by a napkin, and then a small cup-shaped spear of thin platinum was heated to a cherry red and plunged to the bottom of the pocket. Such a procedure it was thought would get not only the pus but also a slight amount of blood from the walls of the cavity. It was thought that the hot platinum would kill any extraneous flora, while the cooled metal would carry to the blood-agar only the germs directly responsible for the disease in question. It must not be forgotten that pus is sometimes sterile, while the true cause of infection may lurk within the walls of the abscess from which the material is being obtained.

The vaccines were then made up so as to contain all the germs found, except the spore formers and the anaerobes that were not grown. While the bacteria of these classes may sometimes play a rôle in the infection the results of vaccine treatment indicate that in these cases their rôle is a minor one. The staphylococci were made to give 300 million to the cubic centimeter. Streptococci, diphtheroids, pneumococci, *Micrococcus catarrhalis*, *Bacillus influenzae* and unclassified bacteria were put in so that each would show 50 million to the cubic centimeter. In ordinary cases of chronic pyorrhea the initial dose is 75 million staphylococci and 12 million of each of the other bacteria, and the dose is steadily raised according to the reaction at the site of inoculation and the general systemic response. If the patient showed exceptional frailness or the inflammation was exceptionally acute, the initial dose was reduced to 37 million staphylococci and 6 million of each of the other bacteria. These doses were generally given a week apart in the arm, or, in thin patients, in the back.

I have not used the opsonic index in the treatment of pyorrhea alveolaris. I feel that clinical symptoms have been a sufficient guide. An interesting observation which I have not seen mentioned elsewhere is the occasional persistence of the induration which forms at the point of injection. It has appeared to me that this can be due only to a lack of digestion and absorption of the bacterial bodies. So long as the induration markedly persists we have an indication that the potentialities of the vaccine injection have not been exhausted. Therefore, further injections may be temporarily withheld or smaller doses given while absorption in the seats of induration is stimulated by massage. This method gives excellent results, and tends to minimize the danger pointed out by Allen,[3] when excessive reaction is caused by doses which may have been perfectly well borne on several previous occasions. As Allen says, however, it should always be borne in mind that, if the systemic reaction lasts over twenty-four hours, it is wise to increase the interval between the doses, and a larger dose should not be given especially if the patient makes good progress on the smaller dose.

If there is a tendency to the rapid formation of creamy tartar deposits on the teeth prior to vaccine treatment, it will be noted that, as the antibodies are formed and the gums show signs of healing, the tartar will be deposited much less rapidly and that the tartar deposited is of a more solid, removable nature and does not tend to burrow under the gum margins. This change in the deposition of tartar I have finally come to regard as a distinct symptom of the successful progress of the vaccine inoculations.

When a pyorrhea pocket shows sudden signs of inflammation during treatment it is always wise to open it surgically with a drill along the root to be sure that there is no back-pressure of pus, and that the antibodies have full opportunity to enter the seat of infection for the purpose of aiding in the cure; for above all things it should be remembered that the vaccine treatment can be successful only when accompanied by judicious local treatment of a surgical and therapeutic character. This applies to all foci of infection whether in the gums or in the impaction of a bowel or anywhere else in the system. It is imperative, therefore, that there should be sympathetic cooperation with the family physician, whose intimate knowledge of the patient and whose careful diagnosis of foci of infection other than those found

3. Allen: Vaccine Therapy and Opsonic Index, Blakiston, Philadelphia, 1913, p. 112.

in the mouth will greatly increase the percentage of successes and add to the permanence of the cures.

Allen[3] speaks of the value of citric acid in 30-grain doses three times a day for the purpose of softening the lymph-wall around the foci of infection by reducing the agglutinative power of the blood. I have found this treatment of service, but give it in the form of an ounce of lemon juice three times a day, which is the equivalent of about 34 grains of citric acid.

I shall now report a few detailed cases.

CASES 1 AND 2.—A young man with pronounced pyorrhea and several fistulas in the gums came to me so despondent that he thought he was going to die. Local treatment caused improvement, but two of the fistulas would not heal. An autogenous vaccine was made in March, 1912, from material obtained from the worst fistula. It contained only a single strain of streptococcus. After four injections, a week apart, the patient gained in weight and then started slowly to lose weight, but as he felt better and the gums improved, the treatment was continued until June, when there was a great improvement in the gums and both fistulas had healed. In the fall the patient returned and, as he and his family physician said that the vaccine had done him so much good, I made another vaccine from a small pyorrhea pocket and obtained four strains of streptococci and a *Staphylococcus aureus*. This treatment caused a complete healing of the mouth so that it was apparently absolutely healthy; the patient's skin cleared, he gained weight and felt, as he said, well. The mixed vaccine seemed most effective.

He begged me to give the vaccine treatment to his wife, who also was suffering from pyorrhea. She had almost the same experience, except that she did not gain weight (her weight was normal), but her mouth showed great improvement and she slept better and felt a great lessening of nerve tension.

CASE 3.—A young woman was vaccinated with a Gram-negative bacillus, 50 million to the cubic centimeter, with some improvement, but not marked. Later a second vaccine was made of *Staphylococcus aureus* and *S. albus*. The gums showed marked improvement, but the soreness around two or three teeth still persisted; the skin generally, from being itchy and showing a tendency to pimples, cleared up and to her great delight remained sightly and comfortable.

CASE 4.—Mrs. A., aged about 50, came to me with all the teeth loose, complaining of great fatigue, trouble with the eyes, constipation and a steady loss of weight. In six months the vaccine treatment had markedly tightened the teeth and her chronic fatigue and constipation were gone; the wrinkles vanished from her skin owing to an increase of weight from 115 to 127. Her eyes, she says, were so improved that she could readily read what before was impossible or accomplished with difficulty.

CASE 5.—A married woman, aged 40, who had been under my local treatment for about two years took a vaccine last fall composed of a streptococcus. She had a complexion covered with red patches, gout in the right eye, hemoglobin 67 and great depression with constant fatigue. In six months the hemoglobin went up to 93, the gout disappeared from the eye, her complexion cleared and the gums made more progress than had previously been made in two years under local treatment. Her greatest satisfaction lay in the fact that she slept well, which prior to the vaccine had not been the case.

In three cases as the gums and abscesses healed marked redness of the nose disappeared. This was associated with great clearing of the complexion and a gain in weight. In other cases there was a consistent healing of the gums that seemed much more rapid than that usually obtained from local treatment alone, but with many of them the time is too short to be sure of a permanence in cure.

In one case that refused to yield either to local or vaccine treatment a tumor of the breast was discovered. Such a depressing focus was obviously a sufficient reason for the poor results obtained, and as the patient refuses to have an operation the prognosis is not good.

Vaccine treatment judiciously used seems to be so valuable in the cases of pyorrhea that it should, in my opinion, always be given a fair trial and always in sympathetic cooperation with the family physician.

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ABSTRACT OF DISCUSSION

DR. THOMAS B. HARTZELL, Minneapolis, Minn.: We sometimes cause deeper infection and greater disturbance, if treatment of the mouth is undertaken immediately prior to operation in other parts of the body. I am convinced that I have been responsible for bringing about two or three cases of pneumonia by disturbing areas of granulation tissue around teeth that needed care. Dr. Mayo, in a recent conversation, confirmed the idea that operative interference in mouths to clear them of bacteria immediately preceding great surgical operations, is an unsafe procedure. Treatment of the mouth should be accomplished by satisfactory measures two or three weeks before any extensive surgical operation is undertaken.

I believe that the bacterial vaccines should be used in conjunction with other measures, and that if used properly they have a vast field of usefulness.

DR. THOMAS L. GILMER, Chicago: Referring to the benefit derived from antiseptic mouth-washes, I suspect that the mechanical cleansing of the teeth rather than the destruction of the bacteria by the medicament caused the improvement indicated. Bacteria are not destroyed by any germicide that I know of which is not also injurious to the mucosa of the mouth. Dr. Black recommends the use of a bulb-syringe with a moderately small nozzle for cleansing the interproximal spaces, especially when the gum septum is much destroyed by pyorrhea or otherwise. If considerable force is applied to the bulb, food and other debris is dislodged. This should be used only as an adjunct to the brush, silk floss and toothpick.

DR. C. H. OAKMAN, Detroit: I am glad to know that those who spoke of vaccines do not hold to the use of vaccines alone, but believe in instrumentation. Dr. Head spoke about the use of peroxid of hydrogen. Three per cent. peroxid of hydrogen should not be condemned, but, as a rule, peroxid of hydrogen used in the mouth in stronger solution would be contra-indicated unless combined with lime-water or some other alkaline agent. I saw two patients in the hospital who were suffering from so-called rheumatism which involved principally the joints of the hands, wrists and elbows. Both had pyorrhea alveolaris combined with alveolar abscesses. One patient had been an invalid for several years. They were given pyorrhea treatment, which eliminated considerable of the infectious material; first stock vaccines and then autogenous vaccines were used with most excellent results. Within two weeks these patients showed marked improvement with regard to the mobility of the joints.

DR. L. DUNCAN BULKLEY, New York: I find the use of peroxid of hydrogen as a local remedy very satisfactory. I use it, first, in ordinary strength, increasing it, as necessary, even to full strength. I insist on slow and complete mastication, with some self-massage, as a means of promoting nutrition in the gums, and I am positive that all the cases in which this has been well carried out have been benefited, and the trouble has often been overcome. I never could see the sense in simply trying to relieve the trouble locally by cleaning out or disinfecting the socket of the tooth.

It is remarkable that the three or four places in the body that have the most micro-organisms—the scalp, the mouth, the scrotum and the vagina—are the places which yield best to surgical treatment. We all know how easiily wounds in the mouth heal; wounds in the scalp are easiest to treat. There is something other than the simple action of organisms to be accounted for in pyorrhea, and we should always study the soil, or state of the system, on which they flourish; when this is in the best condition possible, a relatively small amount of local treatment acts efficiently.

DR. TRUMAN W. BROPHY, Chicago: What has been said about infection would naturally make us extremely timid regarding operations in the mouth, if it were not for the facts that have been named by Dr. Bulkley. When one may operate in the mouth month after month without getting an infection, it impresses us with the feeling that, after all, these pathogenic micro-organisms are not so much to be dreaded as one would assume on general principles. We all know that we cannot remove them from the mouth by any kind of washing, irrigation or brushing; that they become imbedded in the mucosa in such a way often that their removal is absolutely impossible, and that even in the presence of pathogenic micro-organisms we do get good results without infection. We ought, however, to do everything in our power to make the parts as clean as possible. I think that it is wise, when possible, to irrigate the nose, mouth and pharynx prior to any operation in that field.

DR. A. PARKER HITCHENS, Glenolden, Pa.: The discussion to-day indicates that we are at last getting away from the idea that bacterial vaccines alone can cure this infection. The reason we have local infections at all is because the bacteria have been assisted in some way to overcome the body's normal antibacterial forces. The assistance in pyorrhea comes through serumal calculi, tartar-plaques, foreign bodies and traumatism. The resulting inflammation apparently hinders the ready access of the normal curative substances in the blood and lymph to the organisms present. There is just about space enough between the cells constituting the inflammatory area for toxic substances to pass out into the tissues, but not sufficient room for antibacterial substances to get in; so that, even though the opsonic index is raised, no benefit results to the patient. The rational way, therefore, to treat an infection, the inception and continuance of which is facilitated by the presence of foreign irritating substances, is to remove the foreign bodies and possibly also the inflammatory tissue; in other words, local treatment must be resorted to.

DR. NELSON T. SHIELDS, New York: One point has been overlooked, and that is in regard to the saliva. After thorough prophylaxis and the removal of all the micro-organisms from the fermentation of food, you leave the mouth in a normal condition because the saliva counteracts all other acidity that forms when the saliva is normal. But for the saliva we would not have teeth very long.

A splint for holding loosening teeth should be so made that not only the saliva can circulate between the teeth just as well with the splint in place as without it, but also that the soft tissues will be protected. This is best done by extirpating the pulps from all teeth involved in the splint and, after thorough cleansing mechanically, asepsis being maintained, filling the canals with gold at their apices and with oxychlorid of zinc in the remaining portions. This being done the teeth can be prepared in such manner that the mechanism in the construction of the splint will allow the saliva to circulate between the teeth, which will keep the mouth normal. The extirpation of the pulps and canal-filling described will prevent the wasting of alveolar process and gums, which would certainly follow should this important point be overlooked.

Feeble-Mindedness.—The importance of this problem is recognized in an instant when we learn that at the very lowest estimate 25 per cent. of our criminals belong to this class. Perhaps 50 per cent. of our prostitutes are feeble-minded girls; the same is true of our paupers, our drunkards, our ne'er-do-wells; in fact, we now recognize that a large percentage of the various classes of people who make our social problems are mentally defective. Twenty-five per cent. is a minimum estimate, while it has been shown that in all probability 50 per cent. is much nearer the truth, and it may run even higher. A superintendent of one reformatory for men estimates that 75 per cent. of his inmates are feeble-minded; careful tests of the girls in a reform school have shown 72 per cent. feeble-minded. In fact, wherever there are any statistics, it invariably points to the higher figure.—H. H. Goddard, in *Illinois Med. Jour.*

A CASE OF CONGENITAL MYOTONIA*

G. W. BOOT, M.D.
CHICAGO

Although the subject is outside my specialty, the rarity of the disease and the lack of knowledge concerning it justify me in reporting the following case:

Family History.—Patient's father is alive and well, active physically and mentally. The mother died of hemorrhage following some abdominal operation, at the age of 28. Father and mother were first cousins. Patient's father married again and none of the children by the second marriage are afflicted with the patient's disorder. The patient's paternal grandfather died at the age of 60 of spinal meningitis, and his paternal grandmother died aged about 35, from causes unknown to the patient. The maternal grandfather is alive and well, though slightly troubled with asthma, and the maternal grandmother died at the age of 55 from causes unknown to the patient. The patient's mother suffered from a disorder similar to his. This is shown by the disinclination she manifested toward going up and downstairs; the patient also finds this difficult and rather dangerous.

She had three children—all boys. The first died when about 8 years old and showed no signs of any similar trouble. The second child was 2 years older than this patient and manifested the same symptoms, having many falls as a child. He had an unusually active mind and studied hard in college subsequent to an attack of scarlatina. Following this he had a mental breakdown and was placed in a private sanitarium, where he died. The post-mortem examination which I made showed nothing externally beyond an unusually good muscular development and a few slight abrasions. At this time I knew nothing of his peculiar symptoms, so no muscle was removed for microscopic examination. When the skull was opened the calvarium was found thin and translucent in two places just outside the sagittal suture, about where it crosses the coronal suture. The dura was congested in those portions which corresponded to these areas, and was densely adherent to the deeper structures as well as the cortex. Except for this area of adhesion, the brain appeared normal. There was no fracture of the skull; the frontal sinuses and the temporal bones were normal. The lungs were found darker than usual. Over the upper lobe the right lung was adherent to the back of the chest, and the lower lobe adhered to the diaphragm, while the left lung was normal throughout. All the other thoracic and abdominal organs were found to be normal. Death had apparently occurred in a convulsion.

Personal History.—The patient, E. H., aged 21, is the youngest of the three children. His trouble began early in life. He remembers that at the age of 5 he had difficulty in arising from a sitting to an erect position, particularly if he had been sitting on the floor. His muscular trouble has caused him many falls. At the age of 12 he fell about 15 feet, struck on his head in the left temporal region, was unconscious for about twenty minutes, and after the fall could not see for about an hour. This was purely an accident and not the result of the myotonia. At the age of 14 he fell backward down the basement stairs, striking the back of his head on the cement floor, but was not injured. This fall was caused by loss of balance and inability to regain it on account of muscular spasm. At the age of 15 he fell forward on the same stairs. This time he fell like a log, toppling over with all his muscles rigid. He struck on his forehead and was unconscious for a short time, after which an abscess in the frontal region and many headaches developed. He has had chicken-pox, mumps and scarlatina, the latter at the age of 13.

Present Condition.—He has the typical state of myotonia, that is, when his muscles have rested and then are contracted, particularly if they are suddenly contracted, they are thrown into a tetanic condition, from which they do not relax promptly. If he rises from a chair after sitting for a short time his muscles contract and he cannot walk. Sometimes this condi-

* Presented before the Chicago Neurological Society, Feb. 20, 1913.

tion of spasm will last for a minute or more. As a boy he could not take part in races or ordinary athletic games because he could not start quickly. When he got into fights he would always be thrashed before he could get into action. At one time he attended military school and found great difficulty in going through the prescribed tactics. After motion of the muscles is established he can move quite rapidly, but great resistance must be overcome before movement is secured. Going up and downstairs is perhaps the most difficult of all actions for the patient to perform, unless it is getting out of bed in the morning. After a night's rest he has much difficulty in rising. As his arms are less affected than his lower extremities, he first gains support on one elbow, then on the other, and so gradually gets control of muscle action. Cold weather has a marked influence for the worse on his condition. He tires more easily than ordinary persons, presumably because the spasm of the muscles causes more fatigue products to form, and in consequence he seems to require more sleep than the average individual. While the myotonia affects all the voluntary muscles to a greater or less degree, it is more marked in the lower extremities. It appears to be a true hypertrophy, for the muscles are firm and not soft or flabby. He must exercise extreme care when crossing busy streets, for if he were about to be run down by some vehicle he would be unable to move with sufficient speed to get out of the way. It is impossible for him to get on or off a street-car while it is in motion, partly because he cannot move quickly and still maintain his balance and partly because he cannot release the hand-rail promptly.

Examination.—The myotonia appears in the ciliary muscle to a slight extent, for he apparently experiences some slight difficulty of accommodation in looking at objects which are at different distances. If he looks steadily at a near object and then suddenly at a distant object there is a temporary blurring of vision. There is apparently a slight tardiness in response in the muscles of the eyelids. The myotonia is very marked in the masseter muscles. If he bites forcibly these muscles do not relax at once, but there is a considerable interval before he can open his mouth wide. No difficulty could be demonstrated in the muscles of the tympanum. The heart sounds are normal except that they appear rather loud. Any sudden alarm has a marked influence on the pulse-rate, increasing it greatly. The pulse-tracings show that exercise produces an unusual increase in the upstroke of the sphygmogram. "Stretching" causes a marked increase in the pulse-rate, but the blood-pressure is normal. Speech is rather hesitating. Whether or not this is due to an effort to get the muscles of speech in action I have not determined. It seems to me rather to be of mental origin. The diaphragm participates in the spasm, for after a strong exhalation in coughing or sneezing he cannot at once inhale. At times this causes dizziness. He has never become unconscious from spasm of the respiratory muscles. The deep reflexes cannot be elicited. I could find no jaw-jerk, elbow-jerk, wrist-jerk, knee-jerk or ankle-jerk. Light stroking of the abdomen elicited no response. The cremasteric and plantar reflexes are present. His troubles do not increase with age. No electrical tests have been made.

This case brings up several important problems for this young man. What are the chances of his transmitting this disorder to posterity if he were to marry? The condition of the sexual organs appears to be normal. Another problem concerns the occupation he must follow. Ordinary labor is out of the question, as he tires too easily and he cannot move quickly. The upper extremities being less involved than the lower, it seems to me that some occupation would be most suitable in which the chief muscular demands were made on the upper extremities. Also as regards life insurance, and in particular accident insurance, such an applicant would be a poor risk. Whether the disorder will shorten his life, except by accident, is problematic. What of his mental condition? Is there any danger of his becoming insane? His brother's affliction in this respect seemed to be closely connected with the results of the trauma he suffered to his head.

Among the questions of scientific interest that arise are the following: Where is the seat of the lesion or malformation causing this trouble? Is it in the nervous system or in the muscles? What is the relationship of this disorder to pseudohypertrophic muscular paralysis? Is the myotonia in any way related to tetany? Has it any connection with deficiency or perverted action of the secretion of the ductless glands? Does his metabolism differ from that of the ordinary individual?

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ENTEROLITHS

REVIEW OF LITERATURE WITH REPORT OF CASE

FREDERIC D. H. COERR, M.D., NEW YORK
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A tentative diagnosis of enterolith has probably been made frequently, only to be disproved at the time of operation. Conversely, most of the enteroliths reported have been discovered in exploratory laparotomies or on the post-mortem table.

The rarity of the condition is no reason for not bearing it in mind when endeavoring to determine the nature of some obscure abdominal condition, with or without intestinal obstruction.

It is self-evident that no classical picture can be drawn, as the signs and symptoms vary with the size, character and origin of the enterolith and its location in the alimentary tract, which may be anywhere from the stomach to the rectum. The diagnosis, therefore, is one which must be made chiefly by elimination, with the assistance of the laboratory and the Roentgen ray.

A positive, preoperative diagnosis may not be essential in all cases, but in some it would have prevented a fatal outcome, and in others saved years of distress and invalidism.

To stimulate a possible interest in this condition and to place on record one of these surgical curiosities, I submit the following brief review with the report of a case which I treated.

We are all more or less familiar with the hair-balls found in the stomach and intestines of the herbivora and in animals which have the habit of licking their coats, as well as the coats of their fellows. These frequently attain considerable size, and are composed of hair and husks, matted together with hard fecal matter. These are true enteroliths of fecal origin, and although common in animals, are rarely found in man.

Oriental bezoars[1] formerly, and possibly now, of medicinal use in certain countries, are intestinal concretions which probably were formed in *Capra aegarus* and *Antilope dorias*. They are usually spherical or oval, of a dark olive-green color, due to biliverdin, with a smooth, shining exterior, and composed almost entirely of lithofellic acid.

False bezoars, which come from the Eastern countries, have a brownish-black color, and are composed chiefly of ellagic acid, probably derived from the tannin contained in the food consumed by the animals which yield them.

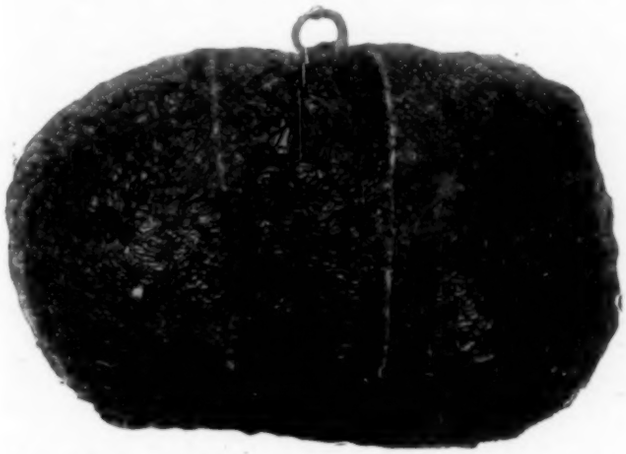
Many foreign substances find their way into the human intestinal tract, but it is rare for any of them to form a nucleus of a concretion of sufficient size to cause intestinal obstruction, unless per chance it lodges in a Meckel's diverticulum or in some pouch of the intestines, as in the case reported by D. M. Greig,[2] in which the obstruction was relieved by the spontaneous evacuation, through an umbilical fistula, of an enterolith 2½ inches in circumference and weighing 24 gm. This may have been a true enterolith, but more probably it was a phosphatized gall-stone; since, judging from all the cases reported, gall-stones are found to be the most frequent cause

1. Smith, E. E.: Reference Handbook of Medical Sciences, 1901, iii, 231.
2. Greig, D. M.: Lancet, London, Dec. 3, 1910, p. 1613.

of intestinal calculi in man. They may remain in the intestine for years, causing no trouble until, gradually increasing in size by accretion or being reinforced by accumulation of other stones, they give rise to symptoms of obstruction, either partial or complete.

U. Gabbi[3] reports a case of this kind in a peasant, aged 45, who, one and one-half years after an attack of hepatic colic, was suddenly seized with a violent pain in the right inguinal region, followed by nausea and vomiting. The pain became rapidly more severe and generalized; the abdomen greatly distended, accompanied by tenesmus without evacuation. Temperature only slightly elevated and pulse accelerated. Purgatives and enema relieved the distention sufficiently to disclose in the region of the ileocecal valve a palpable, freely movable tumor with a hard nodular surface. Later, a hemorrhagic exudation occurred in the peritoneal and pleural cavities. This was removed by aspiration. Stools became normal, but urine contained much urobilin. Patient began to recover and left the hospital, but, according to his story, entire restoration to health came only after a chestnut-sized, whitish stone had been evacuated in a stool, followed by eight bean-sized stones and about fifty small stones.

According to Gabbi, the large number and small size of most of the evacuated stones exclude a diagnosis of enterolith of the feces. Since an attack of hepatic colic had previously occurred, it is probably that these gall-stones had remained in



Enterolith, measuring 15.4 by 12 by 10 cm. and weighing 945 gm.

the intestines for a year and a half, and only after that period had given rise to the preceding symptoms. It is a fact that gall-stones, during a protracted stay in the intestines, become phosphatized and adopt the characteristics of true enteroliths. It is also a fact that gall-stones may more or less completely close the intestine and thus produce attacks of severe intestinal colics, especially if they lodge in large numbers in the narrow portion of the ileum, just above the ileocecal valve. Gabbi attributes the hemorrhagic quality of the exudate to previous malarial attacks.

J. H. Miller[4] reports a case of obstruction of the bowels by enterolith, composed of a phosphatized gall-stone. Recovery in this case also occurred after passing the stone by the rectum. The specimen weighed 183 gr. and measured 1¼ inches in length and 1 inch in width.

The case of Wiltshire,[5] also caused by gall-stones, is interesting in that the accumulated mass caused displacement of the kidney, which was relieved by operation.

The ingestion of large quantities of fruit with indigestible skins and seeds may give rise to a form of enterolith, or "gastrolith," as C. H. Cargile[6] more properly calls it, for the mass accumulates and remains in the stomach. He reports two cases, in which what was practically a cast of the stomach was made by a mass of persimmon skins and seeds. He also refers to two other similar cases, showing that this condition may not be uncommon in the South.

There are also found in the intestines and sometimes in the stools small concretions whose central mass consists of undigested food residue or inspissated mucus, while the bulk of the material is composed of ammonium magnesium phosphate, or perhaps magnesium phosphate, but may include calcium phosphate or carbonate and occasionally calcium and magnesium soaps and albuminous matter.

E. Deetz[6] and C. H. Bedford[7] report cases of intestinal sand.

A distinction is made between "true" and "false" intestinal sand. The latter owes its origin to undigested vegetable particles, occasionally coated with earthy salts. "True" intestinal sand is found chiefly in gouty patients and is composed mostly of lime salts. Bedford attributes this fact to the long-continued milk diet given in such cases.

The only true case of fecal enterolith that I can find in the literature since 1899 is that of Ferguson and Reuter,[8] and as the history resembles in certain respects that of my case, I shall give a brief resumé.

FERGUSON AND REUTER'S CASE.—Mrs. J., aged 30, multipara, housewife, was admitted to Dallas Hospital Jan. 3, 1903. Since 10 years of age she had suffered with severe paroxysmal colic. She remembers at that time a small lump the size of a marble on the right side. This has never disappeared, but has gradually increased in size. Twelve years ago, at the age of 18, she was operated on in a Tacoma Hospital for tumor, but this was not removed. She was later informed that the intestines were too much involved to permit such a procedure.

On admission she had colicky pains in right hypogastric and inguinal regions, obstinate constipation, headache, nausea and vomiting. The abdomen was rigid and greatly distended.

Jan. 16, 1903, after treatment by ice-bags, purging, enema, etc., the abdominal distention was sufficiently relieved to disclose a hard mass the size of a pear, freely movable within the intestine. Owing to its extreme hardness, a foreign body was suspected and a tentative diagnosis of enterolith was made. This was proved correct at operation, when the mass was found lying in the lumen of the ileum, about 15 inches from the ileocecal valve. Above the mass the intestine was dilated to twice its normal caliber and below contracted to one-third its normal size. The mass lay in a symmetrical, fusiform dilatation of the intestine, in which it was quite freely movable, acting as a ball-valve.

The specimen weighed 3½ ounces and measured 2½ inches in width and 3½ inches in length. It was composed of vegetable matter and salts with what appeared to be a large hazelnut nucleus. Recovery was uneventful.

My case reported below presents several interesting features, that is, the size and character of the enterolith, the absence of intestinal obstruction at any time, the symptom-complex leading to a mistaken diagnosis, the age and mental condition of the patient and her subsequent history.

AUTHOR'S CASE.—D. K., Russian, aged 17, single, shirt-waist maker, was admitted to the service of Dr. Taylor at Fordham Hospital on July 12, 1912. Nothing could be learned of her family history. Her parents were of the very poor peasant class of Russia.

Personal History.—The patient recalled no diseases of childhood, but had always been anemic and weak, with poor appetite and constipated bowels. Menstruation began one year ago, her periods being irregular in duration and occurrence and accompanied by severe pain. Patient lives in a poor hygienic and moral environment. At the age of 10 she first noticed a swelling of the abdomen in the hypogastric region. This tumor has gradually increased in size, has caused no pain, but at intervals has been slightly tender. Up to four months ago she had suffered from severe constipation, but since that time she has had large and copious movements. Her menstruation ceased entirely four months ago. She has had no vaginal discharge or uterine pain; denies sexual intercourse. There

3. Gabbi, U.: Clin. med. ital., 1899, xxxviii, 536.
4. Miller, J. H.: Med. Fortnightly, December, 1901.
5. Wiltshire, James G.: Virginia Med. Semi-Month., June, 1902.
6. Deetz, E.: Deutsch. Arch. f. klin. Med., 1901, lxx, 365.
7. Bedford, C. H.: Brit. Med. Jour., Dec. 6, 1902, p. 1764.
8. Ferguson and Reuter: Med. Sentinel, Portland, Ore., September, 1903, p. 499.

has been no nausea or vomiting, no chills or fever. She has not lost flesh or strength.

Physical Examination.—Well-nourished girl, noticeably lethargic, slow and indefinite in answering questions. Complexion is sallow, pupils equal and react to light and accommodation. Tongue is moist, white and heavily coated. Heavy pigmentation of areolae around the nipples. Nipples not erectile; no secretion expressible; breast flabby. Examination of chest revealed nothing abnormal. Except for uniform bulging in hypogastrium, the abdomen is normal in contour. No pigmentation or striae, no muscular rigidity. A mass, the size of a large grapefruit, is palpable in the hypogastrium; freely movable from side to side, but immovable up or down. Pressure elicits slight tenderness. The surface is stony hard and slightly nodular. No fetal movements; auscultation revealed no fetal heart or uterine souffle.

Vaginal examination under ether showed an intact hymen, small firm cervix, and small hard uterus not connected with the hard, movable mass in pelvis. Adnexa, liver, spleen and kidneys not palpable. No roentgenogram taken.

Our first diagnosis of a possible pregnancy was completely routed by the results of the vaginal examination. By a process of elimination, the three most probable conditions were: (1) a mesenteric cyst; (2) a pedunculated ovarian cyst; (3) a dermoid.

On opening the abdominal cavity it was quickly discovered that none of these were correct, for the mass lay within the ileum some distance from the ileocecal valve. An incision about 6 inches long was made along the border opposite the mesenteric attachment and a large enterolith, lying free in the lumen, was removed. The incision in the intestine was closed by one row of catgut suture buried by silk Lembert suture. Appendix removed as routine and the abdomen closed in layer suture in the usual way. It was interesting to note that the mass lay free in the lumen of the intestine, whose walls were symmetrically enlarged and not sacculated as might be expected. The symmetrical enlargement of the lumen had for these many years permitted the fecal stream to pass by on all sides and thus no obstruction had occurred. The slow growth of the enterolith had made possible the gradual adaption of the intestinal wall to the unusual condition.

Various deductions may be made as to the cause of the formation of an enterolith of such proportions in a patient so young. The original cause, probably, may be found in the coarse character of the food which formed her daily diet, and in this way she may be compared with the herbivora, but, if this were so, among the people of her native region enteroliths should be more common than I understand that they are. Her melancholia may be a suggestion as to the cause, for it is well known that among the aged insane fecal impaction is common and enteroliths of fecal origin are not rare. Why could not her melancholia be a secondary manifestation, due to a continued low grade of intestinal toxemia? One would expect, if this were the case, that the removal of the enterolith and daily catharsis would in time tend to improve her mental condition. This did not occur, however. On the contrary she became more and more melancholic and five months later was operated on in the City Hospital by Dr. Dawbarn, who removed a small enterolith about the size of an apple. At this time her melancholia was so profound that her attention could be aroused only with the greatest effort.

Pathologic Report.—Oblong mass about the size of a grapefruit, dark brown in color, and with a foul odor. On the surface are seen many coarse husks of some cereal. On section no nucleus was found. The entire cut surface presented only coarse husks, seeds and stems of plants. Measurements: 15.4 by 12 by 10 cm. (about 6 by 5 by 4 inches). Circumference: long, 43 cm. (about 17 inches). Circumference: short, 34.4 cm. (about 13 inches). Weight: 945 gm. (about 2½ pounds).

Patient made an uneventful recovery and was later transferred to Bellevue Hospital because of melancholia.

Deductions drawn from these various cases would make the diagnosis of enterolith depend on the following factors:

1. Previous history of (a) habitual constipation, alternating with diarrhea; (b) repeated attacks of hepatic colic; (c) long-continued diet of food containing a large percentage of indigestible residue; (d) a sporadic "gorge" of some such foods, such as Scotch porridge and especially persimmons, and (e) the observance by the patient of a small lump in the abdominal cavity, freely movable, which gradually increases in size during the course of years, with or without producing symptoms.

2. Present complaint of (a) the onset of symptoms of typical intestinal obstructions, either partial or complete; (b) presence in the abdominal cavity of a hard mass.

3. Laboratory findings which are helpful by their negative rather than their positive results and the presence of excess of indol or skatol and perhaps bile pigments in the urine.

4. Physical examination, which gives the characteristic signs of intestinal obstruction if this be present; if distention is not too great, the presence of the offending mass may be appreciated. Although not pathognomonic, an enterolith presents certain noticeable features, the most prominent of which is the extreme hardness. Its mobility distinguishes it from most new growths, malignant or benign. This fact and its lack of tenderness help to differentiate it from acute or chronic inflammatory conditions, except as secondary affairs.

The Roentgen ray should confirm the diagnosis, or at least be of great assistance both by its positive findings and by eliminating other abdominal conditions. It is to be regretted that a roentgenogram could not have been obtained in the case reported.

55 East Sixty-First Street.

AN UNUSUAL COMBINATION OF CONDITIONS PRODUCING APPENDICITIS

P. S. ROSSITER, M.D.
Surgeon U. S. Navy
U. S. S. CALIFORNIA

J. R. P., a coal-passer in the U. S. Navy, aged 19, presented himself to the medical officer of the ship at 10 a. m., May 14, 1913, complaining of abdominal pain from which he had suffered since 8 p. m., May 13, 1913. He gave a history of a similar but much milder attack two months earlier. The pain began about the umbilicus but toward morning had become localized in the right iliac region.

Examination revealed a very slight rigidity of the right rectus; no tenderness low in the right iliac region; a distinct tenderness over McBurney's point and great tenderness over a small area above and external to this point. The patient had vomited once during the night. The temperature at this time was 99.2 F. The leukocyte count was 8,200. A diagnosis of acute appendicitis was made, with the prediction that the appendix would be found retrocecal.

The rectum was irrigated; nothing was allowed to be taken by mouth and a hot-water bag was applied to the iliac region. At 1:30 p. m., the temperature remained at 99.2 F.; the leukocyte count was 9,000. The pain over the point above and external to McBurney's point had become intense.

At 2 p. m. the abdomen was opened by McBurney's incision and the cecum found so firmly bound down by a Jackson's membrane, which extended over the lateral and ventral aspects from the caput to the upper third of the ascending colon, that it was impossible to reach the appendix, which was retrocecal, until this membrane had been divided between interlocking ligatures.

After the caput was freed, the appendix, 9 cm. long and 5 mm. in diameter, was found running upward, posterior and external to the colon, completely invested by peritoneum but lacking any mesentery proper, being, apparently, firmly attached to the colon.

The appendix was freed and removed and the stump buried by purse-string suture. As the external appearance of the appendix was normal, search of the vicinity was made for any other cause which might have produced such acute symptoms. None being found, the appendix was opened and a

chicken feather 11 mm. long and 3 mm. wide was discovered lodged in the extreme tip of the lumen. It had entered quill first and the barb of the feather had prevented its extrusion. It was surrounded by a small area of inflammation involving the mucous and submucous coats.

The patient, according to the routine for uncomplicated cases, sat up the following day, walked about and climbed two ladders to a moving-picture show on deck the third night and went to duty on the fourteenth day.

It is surprising that this unusual combination of immobile cecum, with a retrocecal appendix of small lumen, firmly attached to the colon and without a mesentery, had not long ago produced an acute appendicitis, and it is also surprising that an appendix so hampered should have been continuously able to clear its lumen of ordinary fecal content, unless we assume that its small caliber and its position had ordinarily barred access to its lumen until the feather, by means of its shape and the flexibility of its barbs had been able to insinuate itself to the extreme tip.

COMBINED OXYGEN AND NITROGEN COMPRESSION IN EARLY LUNG HEMORRHAGE

L. S. MACE, M.D., SAN FRANCISCO

Since the operation of lung compression with nitrogen gas has become a recognized method of dealing with certain conditions encountered in tuberculosis, we are beginning to realize that this procedure, with some modifications, is applicable to other phases of this disease besides advanced and progressing one-sided lesions.

Hemorrhage from the lungs as the first recognized symptom of a lung tuberculosis is common. Hemorrhage is also common as a serious complication in early cases already under treatment. In either case rest is the most important therapeutic measure and the procedure of resting the diseased lung by compression is so rational, and experience with its use in more advanced cases has been so satisfactory, that there is no doubt that this method of treatment is destined to come into more general use in dealing with early cases, particularly early cases complicated by hemorrhage.

The conditions which present themselves in these early cases differ essentially from those found in patients on whom the therapeutic pneumothorax is usually performed. Pleural adhesions are less commonly found, at least adhesions of sufficient extent and sufficiently fibrous to prevent a successful collapse of the lung. The patient is in a better condition than one wasted by months or years of illness, and rest of the affected lung for a time causes prompt cessation of bleeding and offers a greater hope of recovery than in those who are more advanced.

The permanent and complete compression required when the lung contains cavities and is infiltrated throughout may not be necessary or desirable when the disease is confined to a small area but in constant danger of advancing due to the overwork of the affected organ. A graduated compression, controlled as to duration by mixture of the gases used, seems to offer the best means of bringing about recovery.

Oxygen is absorbed very quickly when introduced into the pleural cavity. Nitrogen is slower of absorption and for this reason is the gas usually used in the therapeutic pneumothorax. Air is almost as quickly absorbed as oxygen and is much more easily prepared for administration than the manufactured oxygen of commerce.

In preparing air for use in this operation it should be passed first through tubes containing cotton-wool, then through one or two wash-bottles of sterile water and lastly through a Chamberland filter into the gasometer.

By making the first compression with air, or with air combined with a small amount of nitrogen, one is assured of a safe compression with danger of gas emboli reduced to a minimum; and also that, if for any reason it should be inadvisable to continue the compression over a longer interval, the lung will soon return to its normal size.

Should it be desired to continue or to increase the compression the following operations may be performed with nitrogen in the usual way.

The following case reports will serve to illustrate the use of this method:

CASE 1.—Miss A. G., ill six months, had a consolidation of the right apex and some infiltration throughout the entire right upper lobe. Hemorrhages occurring at this time, although not severe, were a source of alarm to the patient and 500 c.c. of a mixture of nitrogen and sterile air were introduced into the pleural cavity. As this controlled the hemorrhage and the patient was almost entirely relieved from cough, a further compression with nitrogen was done the following week. The temperature, which constantly was over 100 F. previous to the first operation, came down to normal and has remained so to the present time.

CASE 2.—Mr. B., aged 24, had consolidation at the left apex with a small cavity: There were infiltration and enlarged lymph-nodes at the left hilus with some infiltration extending from the hilus to the base. The patient had had some small hemorrhages and an afternoon temperature of about 101 F. with considerable cough and expectoration. Two days after injection of 400 c.c. of the air and nitrogen mixture the cough had nearly ceased and the temperature returned to normal. Five hundred c.c. of nitrogen were then injected and a full compression obtained which has been continued to the present time.

CASE 3.—Mrs. A. had been ill for a year and a half and had extensive tuberculosis of the left lung with some involvement of the right. Compression was attempted on account of the rapid progress of the disease on the left side with high temperature and severe cough. The patient had suffered much from pleurisy and on the first attempt but 150 c.c. of the air-nitrogen mixture could be introduced. Following this injection she had a good deal of pain due to tension on the adhesions but, as I expected, the oxygen was soon absorbed and on the following day the pain had ceased. Notwithstanding the small amount of compression the cough practically stopped. She rested much better and the temperature, which had been 101 F. and over in the afternoon, went to normal and remained there. Since then compression has been maintained with nitrogen with good results.

It is too soon to offer any opinion as to ultimate results or percentage of cures in early cases treated by this method, but judging from cases under observation the following conclusions may be drawn.

1. Air or a mixture of air and nitrogen is better than nitrogen for lung compression in early cases of tuberculosis complicated by hemorrhage, for the reason that it is more quickly absorbed than nitrogen and the lung quickly resumes its normal size if it seems inadvisable to continue the compression after the hemorrhage is controlled.

2. In case it is desired to continue the compression it is easy to follow the first injection by nitrogen until complete compression is attained.

3. Air is a safer means of compression in the first operation than nitrogen for the reason that if some should escape into the veins accidentally injured in the operation it would be more quickly absorbed and the danger of gas emboli decreased.

4. A partial collapse is effective in controlling hemorrhage, and the primary operation with the air or air-nitrogen mixture is more simple and better adapted to the treatment of early cases than the more lasting nitrogen compression.

240 Stockton Street.

Intractability of Hysteria to Treatment, or Can an Ethiopian Change His Skin?—There are few diseases in which I feel more powerless than in hysteria. I would rather have a case of phthisis in an early stage to cure than hysteria. But the public does not think so: the public regards hysteria as a piece of factitious trumpery which a woman can be scolded or drilled out of. I wish, indeed, it were so.—T. Clifford Allbutt, in (London) *Clinical Journal*.

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED BY THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION. THEIR ACCEPTANCE HAS BEEN BASED LARGELY ON EVIDENCE SUPPLIED BY THE MANUFACTURER OR HIS AGENT AND IN PART ON INVESTIGATION MADE BY OR UNDER THE DIRECTION OF THE COUNCIL. CRITICISMS AND CORRECTIONS ARE ASKED FOR TO AID IN THE REVISION OF THE MATTER BEFORE PUBLICATION IN THE BOOK "NEW AND NONOFFICIAL REMEDIES."

THE COUNCIL DESIRES PHYSICIANS TO UNDERSTAND THAT THE ACCEPTANCE OF AN ARTICLE DOES NOT NECESSARILY MEAN A RECOMMENDATION, BUT THAT, SO FAR AS KNOWN, IT COMPLIES WITH THE RULES ADOPTED BY THE COUNCIL.

W. A. PUCKNER, SECRETARY.

ANTIMENINGOCOCCUS SERUM.—(See N. N. R., 1913, p. 215.)

Slee Laboratories, Swiftwater, Pa. (The Abbott Alkaloidal Co., Chicago.)

Slee's Antimeningitis Serum.—Marketed in vials containing 20 Cc.

ANTISTREPTOCOCCUS SERUM.—(See N. N. R., 1913, p. 216.)

Slee Laboratories, Swiftwater, Pa. (The Abbott Alkaloidal Co., Chicago.)

Slee's Antistreptococcic Serum.—Marketed in vials containing 10 and 20 Cc.

Therapeutics

MORE IMPORTED (CANNED) MEDICATION

The prescriptions herein noted are criticized because they are considered by our medical journals of sufficient importance to be quoted[1] from French journals. Let us hope that such quotations will soon cease. The following combination is recommended to be given in "gouty migraine":

"℞ Extracti colchici cormi
Quininae sulphatis āā gr. xlv (3 grammes)
Pulveris digitalis gr. xxiii (1.5 grammes)
M. Fiant pilulae No. xxx.
Sig.: One pill every evening."

Whether or not digitalis is advisable in gouty conditions is entirely dependent on the condition of the heart, and its use should not be advised without distinct statement of the conditions in which it is indicated, as many times digitalis is absolutely contra-indicated in gout.

The advisability of increasing the circulation in the brain by the use of quinin in gout might be seriously questioned. If the patient was plethoric, or had high blood-pressure or headache, quinin would seem inadvisable. Of course, it should be noted that the actual dosage here given is small, that is, 0.1 gm. (1½ grains) of quinin once a day, and it might not in this amount, cause any cerebral disturbance.

The value of 0.1 gm. (1½ grains) of the extract of colchicum root once a day is mythical; in fact, it is doubtful whether or not colchicum has any real value in chronic gouty conditions. In acute gouty conditions it seems to be of little value unless it produces free movements of the bowels. When colchicum is not prescribed in sufficient amount to cause free movements of the bowels, it is often combined with salicylic acid in some form, and it is the salicylic acid that is of benefit, although such benefit is often attributed to the colchicum.

1. Prescriptions quoted appeared in New York Med. Jour., Oct. 11, 1913; Oct. 25, 1913.

Another prescription recommended "for the relief of acute attacks of gout" is the following:

"℞
Quininae sulphatis gr. xlv (3 grammes)
Fluidextracti aconiti ♏ xx (1.3 grammes)
Extracti colchici cormi gr. viiss (0.5 gramme)
Extracti belladonnae foliorum gr. iii (0.2 gramme)
M. Fiant pilulae No. xx.
Sig.: From one to four pills a day."

If aconite is to be of any value in a condition of acute gout, the preparation which is used must be an active one, and its administration must be pushed until its physiologic action is evident. To obtain the safe activity from aconite in such conditions as are present in acute gout it should be given in solution, and uncombined with other drugs, so that its use may be stopped as soon as there is evidence of its full physiologic action.

If one thinks that colchicum is of value in acute gout, its administration also must be pushed, and certainly one pill a day (although a latitude of from one to four pills a day is allowed) would be useless.

If quinin is of value in gout, let it be given alone, that its value may be demonstrated. Theoretically, a patient suffering from acute gout, if given quinin in doses of any amount, would have unpleasant cerebral disturbances added to his discomfort. There is no apparent physiologic or rational excuse for giving quinin to combat acute gout.

Of course, it is immediately conceded that belladonna, alone or in combination with aconite, would cause an abatement of peripheral pain; such treatment is not new. The only novelty is in the combination offered, and, since simplicity of medication is a desideratum and therefore each drug prescribed should have positive value, the quotation of so doubtful a mixture cannot be excused.

Again, from France come prescriptions for chorea. The writer quoted makes some good suggestions in regard to the general treatment of such patients, both in mild and in severe cases of chorea. He advises, "in mild cases," the following prescription:

"℞
Antipyrinae ʒ iiss (10 grammes)
Tincturae belladonnae foliorum ♏ xl (2.25 grammes)
Syrupii aurantii florum ʒ ii (60 grammes)
Aquae destillatae q. s. ad ʒ v (150 grammes)
Misce."

Why is it necessary to tell an American physician that antipyrin can be dissolved in syrup of orange flowers and distilled water? Instruction to this effect may be given to second-year medical students; it is not necessary to copy such suggestions from France. The nonsense of prescribing distilled water should be emphasized, as investigations have many times shown that the distilled water of the drug shops contains more bacteria than ordinary water. If antipyrin is good treatment in chorea (and it may often be of value) let it be so stated, and the proper dose suggested.

The susceptibility of some persons, even children, to poisoning from belladonna should forbid its use in any such mixture as the preceding. Two very active drugs should rarely be combined in a mixture, as it may be wise to increase the dosage of one drug and to diminish that of the other. Belladonna could be ordered separately in the amount deemed advisable.

The writer quoted goes on to state that if the antipyrin does not prove successful in chorea, hydrated chloral in full doses should be given, and the following prescription is quoted:

"℞

Chlorali hydrati		ʒ ss-i	(2-4 grammes)
Potassii bromidi		ʒ ¼-ss	(1-2 grammes)
Codeinae sulphatis		gr. ⅔	(0.04 gramme)
Syrupi		ʒ v	(20 grammes)
Aquae destillatae	q. s. ad	ʒ iiiss	(110 grammes)

M. Sig.: To be taken within twenty-four hours in tablespoonful doses."

To give hydrated chloral in severe cases of chorea is not new, neither is its combination with potassium bromid. To be compelled to give codein to a violent choreic patient is not a novelty. It is bad treatment to combine these three active drugs in one prescription. It certainly is not necessary to tell American physicians that these very strong depressomotors and narcotics may be given, if need be, to choreic children. Such "canned medication" as this is beneath the dignity of our best medical journals. The statement could be made that in severe chorea the physician may resort to chloral, bromids or codein, and the reader's intelligence would not be insulted.

Another instance of imported medication may be given. A physician of note (else he would not be quoted), while discussing the subject of "cardiac disturbances in chronic dyspepsia," advises in the treatment of palpitation, intermittencies, tachycardia, bradycardia, pseudo-anginal attacks, etc., besides a proper arrangement of the diet, the following prescription for constipation:

"℞

Fluidextracti frangulae		
Fluidextracti rhamni purshianae, āā	ʒ vii	(25 grammes)
Glycerini	ʒ x	(40 grammes)

Misce."

The criticism of this is simply that any physician knows enough to give a laxative without being furnished with a special prescription copied from Europe. Also, some pleasant-tasting, active preparation of cascara is just as good as this combination, or better. The action of frangula is similar to that of rhubarb, but is much harsher. The advised dose of the fluidextract of frangula is not far from 22 minims, while the Pharmacopeia gives 15 minims as the dose. The same dose of the fluidextract of cascara is prescribed; and both are to be administered in glycerin, which, unless well diluted, may produce nausea. The advice is given that a teaspoonful of this mixture be taken "in a little water" at bedtime. This prescription is unnecessarily disagreeable, and might easily act to the patient's disadvantage.

The next suggestion is that "a cool, moist compress, covered with some impervious material may be left on the epigastric and precordial regions over night." The particular one of the preceding cardiac disturbances for the relief of which this application should be made is not specified. Clinically, most patients with tachycardia or pseudo-anginal attacks will not allow any such application over the heart.

One pill made by the following formula is recommended to be taken at night:

"℞

Extracti hyoscyami			
Fluidextracti valerianae			
Zinci oxidi	āā	gr. 4/5	(0.05 gramme)

Fiat pilula No. i."

The extract of hyoscyamus furnishes an atropin treatment. As the particular cardiac disturbance under treatment is not stated, one must object to the use of any form of atropin in palpitation or tachycardia, as in some persons atropin will cause an increased heart activity. The value of valerian is mythical, as has been repeatedly stated in these columns. In fact, it is doubtful if valerian has any activity whatever, except as a carminative. Zinc oxid should not be used internally.

The quotation states in addition that when cardiac discomfort occurs, an ointment, recommended by another noted European clinician, should be lightly rubbed over the precordium. The varietv of cardiac discomfort is again not stated. Perhaps such specification is superfluous. The prescription follows:

"℞

Veratrinae		gr. iiss	(0.15 gramme)
Extracti opii		gr. xii	(0.75 gramme)
Olei terebinthinae rectificati		ʒ ss	(2 grammes)
Olei menthae piperitae		gtt. xii	
Adipis lanae hydrosi		ʒ i	(30 grammes)

Misce. Fiat unguentum."

It should be noted that veratrin ointments are dangerous, both to the one on whom they are used and to the one who applies them. The value of the extract of opium when so used is probably nil. The turpentine would irritate, the peppermint would irritate and the veratrin might irritate. The opium and the wool-fat should be sedative. It is a question whether this ointment "lightly rubbed" on would irritate or soothe. Such a prescription should not be ordered.

The further advice is given that the patient with this cardiac discomfort should take a tablespoonful of the following sedative preparation every hour until the attack ceases. Again it is not stated for what kind of an attack the mixture is prescribed.

"℞

Potassium bromide			
Cherry-laurel water	of each	ʒ iss	(6 grammes)
Syrup of ether		ʒ i	(30 grammes)
Valerian distillate		ʒ iiiss	(110 grammes)

Mix and make into a solution."

This prescription from the standpoint of American medication, the preparations presumably being founded on the United States Pharmacopeia and National Formulary, is the limit of imported canned advice. An explanatory paragraph does state that the "syrup of ether contains 2 per cent. of ether and 5 per cent. of alcohol." The "valerian distillate is made by macerating one part of valerian with eight parts of water for twelve hours, distilling, evaporating to four parts, and filtering." Of course, it stands to reason that either the patient's first attacks of heart disturbance would be relieved or the patient would be dead before such a preparation could be made. But what valerianic nonsense! And just think of the odor of that drug shop during the preparation of this valerian distillate!

The syrup of ether is perhaps stimulant; it certainly is not sedative; and again we have this everlasting dash of cherry-laurel water. Will Europe ever cease worshiping at this shrine?

Last of all comes good old potassium bromid, which any physician on this side of the water would use, if he thought the indications called for it, without this elaborate quotation. The dose of the bromid offered is about 10 grains, and is administered every half hour until the attack ceases. Bromids are slow-acting drugs, and while the initial dose is small, if the heart did not soon right itself, a large amount of bromid would soon be circulating in the patient. It is better, when bromids are indicated in cardiac disturbances, to give a dose considered sufficient, and then to wait a number of hours before further administration, until the drug has had time to act.

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SATURDAY, DECEMBER 20, 1913

THE RESISTANCE OF VARIOUS NERVE-CELLS TO ANEMIA

The nervous system of higher animals is exceedingly sensitive to anemia or other physiologic conditions which involve a local lack of oxygen. Muscle tissue which has been supplied inadequately with this essential element or perhaps completely deprived of it for not inconsiderable periods of time may still show a satisfactory recovery of contractile power when the circulation is suitably restored and the resuscitating oxygen reaches the asphyxiated tissue-cells, but this is not the case with the nervous tissues. The nerve-cells of different classes and positions show differences in sensitiveness to anemia. Those of the cerebrum and cerebellum are unquestionably most readily damaged by oxygen starvation. There is evidence to show, for example, that eight minutes of complete anemia may permanently eliminate the function of some of the cells of the cortical areas. If the blood-supply there is wanting for more than twenty minutes it is rarely possible to discover restoration when the circulation is reestablished. In descending to the lower levels of the cerebrospinal nervous system the resistance to the detrimental effects of anemia or the immunity from permanent damage by lack of oxygen increases appreciably. In sequence the cells of the spinal bulb, the spinal cord and the spinal ganglia, respectively, appear to withstand anemia for longer and longer periods, so that a cessation of the circulation for eight or ten minutes may be of minor significance and permit of prompt complete recovery when the blood-supply is restored. Anemia of the spinal cord for an hour, however, is reported to be sufficient to cause necrosis of all the nervous elements.

A growing appreciation of the foregoing facts helps to explain the unfortunate outcome of conditions, as for example those following the oxygen starvation induced by carbon monoxid or coal-gas poisoning, in which there is acute oxygen want. Certain resulting permanent paraplegias are included in this group. The permanent disastrous results of oxygen want in the nervous retina induced by obstruction of the retinal vessels belong in the same category. Whether there are other neurons in the body which have a greater hardiness than those of the cerebrospinal axis, as just cited, has not hitherto been determined, though there have been intimations that some of the outlying cells, such as those of the sympathetic ganglia, are more stable in the absence of their blood-supply.

The persistence with which portions of the small intestine will exhibit rhythmic contractility long after their removal from the body, if they are treated with an oxygenated restorative like warmed Ringer's solution, suggests that their nervous supply, or more specifically the cells of the myenteric plexus, are exceptionally resistant to anemia. The basis for this assumption of survival of the nervous elements is the generally accepted evidence that rhythmic contractions of the alimentary canal do not occur if the plexus is wanting.[1] Quite apart from the purely theoretical aspect of the question, the determination of the degree of resistance of the intrinsic neurons of the alimentary tract to anemia and their limits of endurance are of interest in connection with the possibility of continued functioning after the interference with the circulation in surgical states such as hernia and intussusception.

An experimental inquiry conducted in the Harvard laboratory of W. B. Cannon, to whom we are already indebted for some of our fundamental knowledge of the alimentary tract, has furnished the basis for an intelligent appreciation of the points at issue in relation to the intestine.[2] According to these findings, if the vessels supplying parts of the alimentary canal are ligated, the tissues become edematous and purple, but may not be completely anemic. After this condition has persisted for six or seven hours such regions may recover normal activities, and, on being examined histologically, show nerve-cells with normal appearance. If complete anemia is produced by suitable compression, the condition may last as long as three hours and normal motility may still be restored. A persistence of compression anemia for three and one-half hours or longer, however, almost invariably results in loss of function and disappearance of nerve-cells in the compressed parts.

Cannon and Burket point out that the continued existence of the cells of the myenteric plexus after three hours of complete anemia — two hours longer than the cells of the sympathetic ganglia — reveals them as the most hardy nerve-cells thus far found in the body. Incidentally, it is worthy of emphasis that the concomitance of persistence or loss of function with persistence or destruction of nerve-cells lends new support to the contention that the spontaneous contractions of the alimentary canal are of nervous origin.

THE WASHINGTON ANTIVIVISECTION CONGRESS

The third Antivivisection and Animal Protection Congress has been in session in Washington during the

1 Magnus, R.: Arch. f. d. ges. Physiol., 1904, cii, 362.

2. Cannon, W. B., and Burket, I. B.: The Endurance of Anemia by Nerve-Cells in the Myenteric Plexus, Am. Jour. Physiol., 1913, xxxii, 247.

past week. As the name indicates, the congress has represented two interests. So far as it was an animal protection congress, all could heartily support it, even the "vivisectors" themselves, for no men have done more to protect animals from pain and disease than they. But so far as it was an antivivisection congress it was hostile to the very means which have proved most potent for alleviating the suffering of man and the lower animals as well. Under these circumstances it is impossible to judge the value of the lists of bishops, generals, senators, clergymen, governors, members of Congress and other public men widely advertised as vice-presidents of the congress, because it is impossible to know on which aspect of this two-faced organization they were looking when they permitted the use of their names.

Most prominent among the foreign members was the founder of these congresses, the widely heralded Miss Lind-af-Hageby, whose false statements a decade ago cost Coleridge $25,000 in his suit with Bayliss, and whose attempt this year to refute the charges that she was "a deliberate and systematic liar, and that her antivivisection propaganda had been carried on by a systematic campaign of falsehood," resulted in a prompt verdict against her. Her present contention is that more is to be expected for human life and welfare from hygiene and sanitation than from drugs and surgery. That practically all the modern practice of hygiene and sanitation is firmly based on the results and methods of "vivisection" is a fact which she seems to have overlooked.

The Rockefeller Institute, which in the short period of its existence has given the medical profession an effective means of combating cerebrospinal meningitis, a new method for the diagnosis of syphilis and devices for artificial respiration in anesthesia and shock, not to mention other important discoveries, was the chief target for vilification. It was designated by various speakers as a "chamber of horrors," as a "working model of hell," and as the crown of a "toppling mass" of wealth, "tainted by lying, stealing, arson and murder."

The most sensational claim made at the meeting was that not uncommonly physicians inoculate unsuspecting persons, often children and other dependents, with the germs of disease, solely for experimental purposes. This statement has been published with big head-lines in newspapers in all parts of the country. The evidence for it consisted in citing once more instances which have repeatedly appeared in antivivisection literature, and have repeatedly been shown to be false or without professional support. The "poisoning" of insane patients with thyroid extract was again mentioned, although the crafty deception in this charge has been made clear at least twice in the past twelve years.[1] The spraying of the nose and throat of patients with "poisons of diphtheria, small-pox, scarlet fever or consumption" was again instanced, although it has been disclosed that the person who confessed to having done this had also confessed that he had no standing in the medical profession, and, indeed, was quite in agreement with many antivivisectionists in disbelieving that bacteria cause disease.[2] The use of luetin was again described[3] as the "inoculation of the germs of a vile incurable disease," although it has been carefully shown that luetin was first proved wholly innocuous by injections into animals and into the discoverer himself, as well as into other physicians who volunteered for the test, and not until then was used for diagnostic purposes.

The public should definitely understand that the medical profession wholly repudiates and regards with abhorrence the employment of any procedure whatever which is in any way likely to injure rather than to benefit a patient who has entrusted himself, or who has been entrusted, to a physician's care. Such action would be absolutely at variance with the prime object of medical service—the welfare and the restoration of the sick.

Fortunately, the lay press is beginning to understand the unreliability of antivivisectionist assertions. Various papers have commented on the "virulence and nonsensical folly" of the misstatements and misrepresentations of antivivisectionists, have recognized them "as peculiarly impervious to the facts," have asserted that they "wilfully hide the serious purpose underneath the experiments on animals," or have flatly declared that they are "promulgating the most outrageous falsehoods about men whose lives are devoted as unselfishly and as efficiently to the service of humanity as any that could be mentioned." Even one of the speakers at the congress was moved to urge his hearers to "stick to the facts" and to "cease making wild statements which they could not prove." Let us hope that some day they may do so.

1. Cannon, Walter B.: Characteristics of Antivivisection Literature, Critic and Guide, February, 1911; Defense of Research Pamphlet XIX, p. 10.

IN WHAT FORM ARE PROTEIN DIGESTION PRODUCTS ABSORBED?

The idea that the products of the digestion of protein are regenerated into blood proteins as they pass through the alimentary wall in the course of their absorption has so long dominated the teaching of physiologists that it has not been easy to become adjusted to an entirely new doctrine in respect to the fate of these foodstuffs. The stubborn facts against which all attempts at theorizing have sooner or later stumbled are that ingested proteins disappear from the lumen of the digestive tract somehow in the course of alimentation; their nitrogenous end-product, urea, appears in a few hours in the urine; and what happens to bridge the gap between the beginning and end of this important chapter in physiology has almost completely eluded discovery, and therefore given room for a play of speculation.

It was as easy as it was inconclusive to assume that a portion of the food proteins or their derivatives may be built up in the cells lining the alimentary canal to

2. Life, May 26, 1910.
3. Jour. Zoöphily, 1913, xxii, 4.

form blood proteins, so that this organ would have to be regarded as an important blood-forming organ. The other extreme of hypothesis found its expression in the view that probably a major portion of the protein does not reach the tissues at all as a nitrogenous compound, but undergoes deamination in the intestinal wall, the nitrogen being rapidly carried by the portal circulation to the liver and converted into urea, and thereupon excreted by the kidneys, while the non-nitrogenous moiety is carried to the tissues, to which it serves as an important and ready source of energy. If we seek for the underlying reason why recourse was had to either of the preceding assumptions (for which it must in fairness be admitted that there was something more than speculative justification), it doubtless rests in the fact that no convincing evidence of the presence of nitrogenous digestion fragments in the blood after a protein meal was forthcoming. Every now and then some one announced the discovery of them, only to have its reality denied in a succeeding publication. So competent a chemical investigator as Abderhalden has in the past been unable to admit that nitrogenous protein digestion derivatives are present in the blood in amounts indicative of any routine physiologic function.

The aspect of the subject has become changed, however, by the advent of new and more delicate methods of blood analysis. To some of these reference has been made here in the past.[1] The earlier work of Delaunay[2] was followed by the noteworthy experiments of Folin and Denis[3] and of Van Slyke and Meyer,[4] all indicative of an indisputable absorption of amino-acids as such from the alimentary tract. This evidence that the protein products truly reach the blood-stream as amino-acids and are presumably carried to the tissues where they may be reintegrated into the proteins characteristic of each tissue or finally disintegrated with resultant production of the end-product urea has again been strongly fortified by new contributions from London's laboratory in St. Petersburg.[5] These show that only a few minutes after the introduction of an amino-acid like alanin into the intestine an increased content of aminonitrogen is detectable in the blood of the jugular vein, that is, the general circulation. Furthermore, during the digestive cycle in animals the proportion of aminonitrogen increases not only in the portal blood, but also in the peripheral circulation — less, as a rule, in the latter than in the former. Such evidence must be taken as an unmistakable indication of the current drift. The amino-acids are absorbed as such; and so they play their rôle in the nutritive processes. It has at length become necessary to readjust our theories to the facts of experiment and observation.

1. Can Proteins Be Absorbed without Preliminary Digestion? editorial, THE JOURNAL A. M. A., March 9, 1912, p. 702; A New Theory of Protein Metabolism, Sept. 14, 1912, p. 880; More Facts Regarding Protein Metabolism, Oct. 26, 1912, p. 1548.

2. Delaunay, H.: Contributions à l'étude du rôle des acides aminés dans l'organisme animal, Arch. d. mal. de l'appareil digestif, 1911, v, 218.

3. Folin, O., and Denis, W.: Protein Metabolism from the Standpoint of Blood and Tissue Analysis, Jour. Biol. Chem., 1912, xi, 87 and subsequent papers.

4. Van Slyke, D. D., and Meyer, G. M.: The Amino-Acid Nitrogen of the Blood, Jour. Biol. Chem., 1912, xii, 399.

5. London, E. S., and others: Weitere Untersuchungen über die Verdauung und Resorption unter normalen und pathologischen Verhältnissen, Ztschr. f. physiol. Chem., 1913, lxxxvii, 313.

OCCURRENCE OF TUBERCLE BACILLI IN THE CIRCULATING BLOOD

A great deal of work has been done during recent years on the question of the occurrence of tubercle bacilli in the blood of tuberculous patients. Two methods have been used, namely, the direct examination of the blood in stained preparations and the inoculation of guinea-pigs with blood. The results obtained by different investigators are in each case widely divergent, some having high percentages of positive results, others almost or wholly negative results. Some even report finding bacilli in the blood of healthy persons, who at least were not suffering from any active tuberculosis. In certain series of observations in which both methods were used, the microscopic examination of the blood gave from 60 to 100 per cent. of positive results, while the inoculation of guinea-pigs gave only an occasional positive result, and yet the latter method is recognized as by far the more sensitive and reliable of the two.

There are also, of course, observations in which closely concordant results were obtained, as for instance, those recently reported by Klopstock and Seligmann.[1] These investigators injected guinea-pigs with the sediment of from 5 to 15 c.c. of blood from forty-nine patients with pulmonary tuberculosis in various stages, but in no case did any inoculation tuberculosis develop. In no case in this series did the examination of blood preparations reveal bacilli that could be accepted as unquestionable tubercle bacilli. Before the sediment was injected it was treated with antiformin and then washed.

How is this divergence of results to be explained? As regards the results of microscopic examination alleged as positive, we know that, in some cases at least, saprophytic acid-proof bacilli present in the water or solutions used have been mistaken for tubercle bacilli. It is possible that precipitates and other artefacts have been so mistaken also. Now with respect to the animal inoculations it should be noted that the amount of blood used, the number of animals inoculated and the kind of cases of tuberculosis from which the blood was obtained have not been the same, so that the results really are not comparable. It is also evident that grave errors have been made by some workers in not exercising adequate care in the study and interpretation of the alleged tuberculous lesions in the guinea-pigs. In other words, results reported as positive do not stand the tests when judged according to the criteria applied to inoculation-tuberculosis. At all events, the results so far recorded of observations on the occurrence of tubercle bacilli in the circulation in tuberculosis are so

1. Klopstock and Seligmann: Ztschr. f. Hyg. u. Infectionskr., 1913, lxxvi, 77.

contradictory and in many cases so manifestly unreliable that no definite conclusions are permissible. The work has not given us any methods of value in diagnosis, nor has it given us any new views as to the genesis of tuberculosis.

THE PRESERVATION OF MILK BY DRYING

In the attempt to furnish milk to the consumer in a form free from the objections which hygienic considerations are yearly interposing in greater degree, one of the chief stumbling-blocks lies in the necessity of keeping the nutrient fluid fresh between the times of milking and of its delivery to the home. The problem of the modes of preservation, involving the questions of the application of heat to the raw product, the use of chemical preservatives, or the subjection to low temperature, has given rise to some acrimonious debate and has been the occasion for not a little legislation attempting to regulate the practices concerned. All of the schemes proposed or in use owe any alleged efficiency to such potency as they may exhibit in the direction of inhibiting or destroying the growth of micro-organisms. All of the proposed modes of preserving milk in transit have serious limitations in respect either to effectiveness or to expediency and cost. In view of this it seems strange that greater effort has not been devoted to perfecting some more suitable plan, in particular the obviously promising scheme of desiccating milk.

The concentration of milk by evaporation in the air was attempted more than a century ago. The first really practical method was devised by Mr. Gail Borden of White Plains, N. Y. Acting on a suggestion made by Horsford, he successfully evaporated milk at a low temperature under reduced pressure, and in 1856 obtained a patent for his process of preparing "condensed" milk, as it was subsequently termed. The lack of legal restrictions soon permitted the use of nutritively inferior grades of milk in the production of condensed milk, so that for many years poor qualities prepared from skimmed milk were freely sold to the ignorant customer. From the point of view of the danger of milk as a source of infection, it is doubtless true that there are advantages in condensed milk which are not always inherent in the fresh product. Delépine is said to have proved conclusively that tubercle bacilli, added purposely to milk before concentration, are invariably killed in the process of evaporation.[1] Condensed milk, however, is by no means always germ-free, and living organisms have been found in considerable number in commercial samples, although the species which were isolated were not pathogenic.[1]

The chief objection which has been raised to the widespread use of the more easily conserved condensed milk in place of the readily deteriorating fresh milk has been derived from the field of infant-feeding. Whether or not it be fundamentally justified, there is nevertheless a strong belief prevalent, based on apparently substantial grounds, that children fed on condensed milk are less resistant to the encroachments of disease than those brought up on fresh milk. Furthermore, condensed milk will deteriorate like fresh milk if it is diluted and then exposed to the chance of bacterial contamination.

Since the early years of the present century attempts have been made to carry the desiccation of milk still further than is done in the case of the thick, viscous condensed milk which already is concentrated enough to be a poor culture-medium for micro-organisms. The presence of fat has interposed the greatest difficulty to the complete drying of milk. Three successful processes for the manufacture of dried milk are in actual use.[2] All of them are protected by general and subsidiary patents which make it difficult as yet to assign a universally recognized name to the procedures. In the Ekenberg process the milk is sprayed under constant pressure on the inner surface of a rotating steam-heated cylinder. The milk is thus dried in partial vacuum, at a comparatively low temperature. A more frequently employed process, common in the production of cheaper grades in the United States, sprays the previously concentrated milk on the exterior highly polished surfaces of revolving steel drums. Here it is almost instantaneously dried at a temperature of 230 F. and then scraped off by sharp knife-blades. In the Bénevot-de-Neveu process an entirely different product results. The milk is first concentrated in a vacuum and then sprayed under great pressure into a large drying-chamber where the cloud of finely divided particles is surrounded by a current of hot air and thereby instantly dried. The result is a powder in which many of the physical and chemical properties of the original milk are retained.

The chief objection to most of the material prepared in this way lies in the less agreeable flavor of the dried product. There is every reason to believe that this can be improved with increased attention to the technic, especially the temperatures applied in the different stages and the containers employed. Desiccated milks have already begun to receive attention in the clinic of infant-feeding.[3] This is the severest test to which it can be put. Economy, cleanliness, convenience and hygienic considerations all suggest that high grades of dried milk are entitled to careful investigation for the possibilities which they present. A study of the markets shows that they have already made an inroad into the culinary departments of many institutions and homes.

1. Coutts, F. S. H.: Report to the Local Government Board on an Inquiry as to Condensed Milks, London, 1911, N. S., No. 56.

2. A description is given by Pritchard, E.: The Milk Problem—Condensation and Preservation, Bedrock, 1913, ii, 244.

3. Porcher, C.: Le lait desséché, Paris.

Psychiatry.—Psychiatry not only enters into intimate contact with all the fundamental sciences of medicine and biology in general, but also touches on the social and moral sciences. On all it imposes problems, from all it requests data.—Lugaro, Modern Problems in Psychiatry.

Current Comment

ANOTHER "CANCER CURE"

A few days ago some of the Denver newspapers contained full-page advertisements of a "cure for cancer." The public was told: "The International Skin and Cancer Institute of Denver claims to have the *only* reliable treatment for cancer in existence. It claims that the remedy it possesses is the *only cure* in the world." The exploiter of this, the latest of cruel frauds, is one John D. Alkire, who, so far as we can learn, has neither medical nor pharmaceutical knowledge. What the "cure" is supposed to be, we do not know; neither, for that matter, is it necessary to know. Certain it is that the thing is a fraud — a cruel fraud, a damnable fraud. It is no excuse to say that Alkire is honestly convinced that the stuff he is selling is a cure for cancer. His conviction merely makes him that much more dangerous and gives him greater potentialities for harm. From its method of exploitation it is impossible to absolve Alkire from the suspicion, at least, that he is not acting in good faith. He claims to have lost both his father and his mother from cancer. If, therefore, he was absolutely convinced that he had the only cure known for this fearful scourge, it is hardly conceivable that he would monopolize the secret of it for the dollars to be made in exploiting it. Alkire and those associated with him will doubtless make money. Those afflicted with cancer, and those who believe themselves to be afflicted with cancer, will flock to Denver for the cure. Of those who rely on Alkire, the actual victims of the disease will, of course, die, but there will be the usual proportion of recoveries from non-malignant sores that will be heralded as "cures." This is the history of every fraudulent "cancer cure." Among the first beneficiaries of Alkire's inhuman business are those Denver newspapers that sold their pages to give publicity to this lying message to the unfortunate sufferers from cancer. To the honor of Denver be it said, some of its newspapers refused to accept Alkire's advertisement.

[After the preceding was in type a proof was sent to a Denver correspondent. Apparently, it was shown to some one connected with the Alkire concern, for on December 15, THE JOURNAL received the following telegraphic day letter from Denver:

"We have learned of your proposed article to be published under title of Current Comment "Another 'Cancer Cure'" in which you make an unwarranted attack upon John D. Alkire and the International Skin and Cancer Institute Company. We wish to advise you that we consider this communication libelous, damaging and wholly unwarranted and that we will attempt to hold you responsible in damages if the communication is published and circulated in that form.—JOHN HORN CHILES, JOHN A. DEWEESE, Attorneys for John D. Alkire and the International Skin and Cancer Institute Company."

THE JOURNAL is not given to publishing matter for the purpose of injuring any one. Neither is it in the habit of being intimidated by threats of lawsuits. The comment on Alkire's "cancer cure" was written for one purpose only: that of attempting to offset in some small degree the publicity that had been given, through a portion of the Denver daily papers, to as cruel and inhuman a fraud as we know of — an alleged cure for cancer — and to warn the public from placing any faith in it. This being the purpose, THE JOURNAL is not to be turned from its course by threats of reprisal.]

NEWSPAPER COMMENT ON ANTIVIVISECTION

We comment elsewhere on the recent antivivisection congress in Washington. It has been interesting to notice the attitudes taken by the newspapers. In general, those commonly classed as "yellow" have sided with the antivivisectionists, although in a somewhat half-hearted way, at the same time giving prominence in glaring headlines to the false, and therefore sensational, statements of these misguided enthusiasts. On the other hand, the great mass of newspapers, in their news pages as well as editorially, have tried to represent the real facts. The editorial comments in some instances have been excellent and have shown appreciation of the true conditions. Typical of these is one in the Boston *Herald*, which, under the title "Those Who Will Not See," says: "At the International Antivivisection Congress now in session in Washington, time-honored falsehoods are being rehearsed. Antivivisectionists are peculiarly impervious to facts. Perennially, they assert that animal experimentation has never accomplished anything." It continues with a series of paragraphs setting forth the great benefits to humanity resulting from animal experimentation, which has reduced the mortality in diphtheria from over 50 per cent. to practically nothing; has found a certain preventive for lockjaw; has discovered the Pasteur treatment for hydrophobia, and is daily uncovering great truths which must eventually bring to light cures for cancer, infantile paralysis, tuberculosis and other scourges of mankind which have hitherto baffled the scientists. It then continues: "But all this mass of evidence rolls from the antivivisectionists like water off a duck's back. And when Miss Lind-af-Hageby, the most audible of the assembled humanitarians, suggests sarcastically that scientists should try the experiment on themselves, she overlooks, from the depth of her ignorance, the long roll of honor of men and women who deliberately and unflinchingly risked and gave their lives in the cause of science."

A PAMPHLET ON QUACKERY

The campaign of the Chicago *Tribune* against quacks operating in and from Chicago, has been referred to at various times in these pages. The *Tribune's* articles have had a far-reaching effect. The interest of public and press alike has been awakened. But quackery is about the same wherever we find it, from New York to San Francisco, from Portland to New Orleans. The facts brought out by the *Tribune*, therefore, are just as pertinent to the public generally as they are to the citizens of Chicago—and they will be as much to the point five years from now as they are to-day. Newspaper campaigns must, in the nature of the case, be more or less evanescent. The memory of the public is notoriously short. For this reason THE JOURNAL

obtained permission to reprint the *Tribune's* articles in pamphlet form and thus put the material in a comparatively permanent form. The result is a booklet of 142 pages.[1] It should be in the hands of every physician to show those of his patients who are likely to fall into the hands of medical charlatans. Written as it is, by newspaper men, and containing as it does, the actual, first-hand experiences of the *Tribune's* investigators, it tells a story that is at once interesting and enlightening. The *Tribune* has turned on the light; we hope that the noisome pictures disclosed thereby may be given the widest possible publicity.

Medical News

ALABAMA

Personal.—Dr. Alf F. E. Thomas, Birmingham, was painfully injured in a collision between motor cars December 6.

New Society Formed.—The Alabama Society of Moral and Sanitary Prophylaxis was organized at Birmingham December 29. George H. Denny of the University of Alabama was elected president; Dr. George Petrie, Auburn, a vice-president, and Dr. William W. Dinsmore, Montgomery, secretary.

Health Campaigning.—Dr. William H. Sanders, Mobile, state health officer, and Dr. Philip B. Moss, Montgomery, director of the State Pasteur Institution, inaugurated a health campaign in Henry County the second week in December and in the succeeding week conducted a similar campaign in Houston County.

New Staff Appointed.—At a meeting of the board of directors of the Elizabeth Duncan Memorial Hospital, Bessemer, the following staff was appointed: Dr. Thomas F. Robinson, chief of staff; Dr. Samuel E. Grout, consulting surgeon; Dr. William Waldrop, oculist, and emergency staff, Drs. R. W. Waldrop, Carl A. Harris, Thomas C. Donald, James C. Berry and Edward P. Lacey.

New Officers.—Blount County Medical Society: president, Dr. Wilson T. Cantrell, Blount Springs; secretary-treasurer, Dr. Jesse T. Hancock, Oneonta.——Morgan County Medical Society at New Decatur, December 6: president, Dr. Arthur M. White, Hartselle.——Chilton County Medical Society at Mountain Creek: president, Dr. Julius P. Hayes; secretary-treasurer, Dr. Thomas J. Marcus, both of Clanton.——Dallas County Medical Association at Selma, December 3: president, Dr. Thomas G. Howard; secretary, Dr. Clarence C. Elebash, both of Selma.——Hale County Medical Society at Greensboro: president, Dr. Jacob Huggins, Newbern; secretary-treasurer, Dr. Charles A. Poellnitz, Greensboro.——St. Clair County Medical Society at Odenville, December 3: president, Dr. James W. Wood, Springville; secretary-treasurer, Dr. J. R. Chandler, Odenville.——Etowah County Medical Society at Gadsden, December 3: president, Dr. James H. Wood, Attalla.——Calhoun County Medical Society at Anniston, December 2: president, Dr. James C. Moore, Anniston; secretary, Dr. Jackson W. Landham, both of Anniston.——Madison County Medical Society at Huntsville, December 1: president, Dr. Charles E. Blanton, New Market; secretary-treasurer, Dr. Edgar Rand, Huntsville.——Jefferson County Medical Association at Birmingham, December 1: president, Dr. James M. Mason; secretary-treasurer, Dr. Harry P. Shugerman, both of Birmingham.——Lee County Medical Society at Opelika; president, Dr. Abijah B. Bennett; secretary-treasurer, Dr. O. Velpeau Langley, both of Opelika.——Montgomery County Medical Society at Montgomery: president, Dr. Fred W. Wilkerson; secretary, Dr. Paul S. Mertins, both of Montgomery.

CALIFORNIA

To Help Convalescents.—The auxiliary to the University of Stanford Clinic, at a meeting recently held at Lane Hospital, San Francisco, effected a permanent organization to care for patients after their discharge from the hospital.

New Officers.—Yolo County Medical Society at Woodland, December 2: president, Dr. Claire Rason; secretary, Dr. Lula J. Beebe, both of Woodland.

Psychopathic Ward Approved.—The psychopathic ward of the Los Angeles County Hospital has been approved by the board of supervisors and formally accepted. Construction has begun on another wing of the Los Angeles County Hospital.

Personal.—Dr. Philip B. Fry, Benicia, has been appointed surgeon for the Southern Pacific system at Fort Costa.——Dr. Esther Rosencrantz has returned to San Francisco after several years of study abroad.——Dr. William F. Snow, Sacramento, secretary of the State Board of Health, has resigned on account, it is said, of differences with the State Board of Control.

ILLINOIS

Hospital Closed.—The hospital at the Navy Training Station, Great Lakes, constructed by the government at great expense, is not to be reopened as it is considered an unnecessary expense to operate a large hospital when there are so few men stationed at the station.

Personal.—Dr. Frank Parsons Norbury, Springfield, and Dr. Albert H. Dollear, Hospital, have purchased Maplewood Sanatorium, Jacksonville, which was originally established by Dr. Norbury in 1901.——Dr. Lee O. Scott, Rockford, is reported to be seriously ill with typhoid fever in Canonsburg, Pa.——Drs. R. R. and H. F. McCarthy, assistant physicians at the Elgin State Hospital, have been transferred to the Dunning State Hospital.——Dr. Faith Spangler, assistant at the Dunning State Hospital, nas been transferred to the Elgin State Hospital.

New Officers.—Adams County Medical Society at Quincy, December 8: president, Dr. Kirk S. Shawgo; secretary, Dr. Elizabeth B. Ball (reelected), both of Quincy.——Vermillion County Medical Society at Danville, December 8: president, Dr. Richard A. Cloyd, Catlin; secretary, Dr. E. Gordon C. Williams, Oakwood.——Madison County Medical Society at Alton, December 5: president, Dr. Edgar A. Cook, Upper Alton; secretary, Dr. Edward W. Fiegenbaum, Edwardsville.——Kewanee Physicians' Club, organized December 4: president, Dr. H. Nelson Heflin; secretary-treasurer, Dr. Francis O. Lowe.——North Central Illinois Medical Association at La Salle, December 9: president, Dr. George A. Dicus, Streator.

Chicago

Medical Litterateur Dies.—Carl H. von Klein, well known in Chicago as a collaborator of medical and collateral literature, as a translator and abstractor of medical articles, noted as an Egyptian scholar, whose work on the "Papyrus Ebers" was almost ready for issue, died in the Cook County Hospital, December 12, from diabetic gangrene, aged 71.

Ball Addresses Medical History Society.—The ninth meeting of the Society of Medical History of Chicago was held at the Hotel Sherman, December 11, when Dr. James Moores Ball, St. Louis, delivered an address entitled "Great Artists and Famous Anatomists," illustrated by lantern slides. Dr. William E. Quine, president of the society, was in the chair.

Health Appropriation Cut.—In the city budget for 1914 the commissioner of health asked for $1,160,278 for his department and the comptroller reduced this estimate by $220,497, leaving the recommended apportionment $2,870 less than last year. The health commissioner has made a vigorous protest, as he maintains that with this reduction the department will be dangerously crippled by lack of funds.

Ball for Lying-In Hospital.—The artists' fête to be given in the First Regiment Armory, January 9, is for the benefit of the new Chicago Lying-in Hospital, which is to be located on Fifty-First Street facing Washington Park. The building is to be six stories, fireproof, with six operating-rooms, five nurseries, two laboratories and four incubators. There will be beds for 105 mothers and their babies, and one-third of the hospital will be given up to free patients.

INDIANA

State Board Recommends Full-Time Service.—In the annual report of the State Board of Health recommendations are made that health officers be paid sufficient salary so that they may give their entire time to the work of their offices and not be compelled to take private practice.

Verdict of Not Guilty in the Knabe Case.—William B. Craig, a veterinary surgeon of Indianapolis, charged with the murder of Dr. Helene Knabe, was tried at Shelbyville last week. After

1. "Men's Specialists Frauds," price 10 cents, post-paid.

the prosecution rested, the judge instructed the jury to return a verdict of not guilty on account of insufficient evidence.

Hospital Notes.—The commissioners of Hamilton County have authorized a $30,000 bond issue for the erection of a hospital at Noblesville. It was decided to purchase a building erected several years ago for a hospital by Dr. Samuel Harrell. ——Property valued at $22,000 has been presented to the hospital association at Washington, Ind.

Personal.—Dr. Charles S. Little, Petersburg, is reported to be critically ill.——Dr. John A. Salb has been appointed assistant police surgeon of Indianapolis.——The office of Dr. David H. Harold of Indianapolis was damaged by fire to the extent of $3,000 December 3.——Dr. David N. Foutz, Royal Center, was operated on for cataract recently, and is reported to be doing well.

New Officers.—Elkhart County Medical Society: president, Dr. Elmer E. Ash, Goshen; secretary, Dr. James A. Work, Jr., Elkhart.——Henry County Medical Society at Newcastle, December 4: president, Dr. Herman W. McDonald, Newcastle; secretary-treasurer, Dr. Walter C. Van Nuys, Newcastle.——Sullivan County Medical Society at Farmersburg: president, Dr. Robert H. Van Cleave; secretary-treasurer, Dr. James B. Maple, Shelburn.——Wells County Medical Society at Bluffton, December 2: president, Dr. Louis Severin, Bluffton; secretary-treasurer, Dr. Samuel A. Schoemaker, Bluffton.

IOWA

Personal.—Dr. Guilford H. Sumner, Des Moines, entertained the state executive council at luncheon December 9.——Dr. George Hofstetter, Clinton, who has been seriously ill, is reported to be convalescent.——Dr. Ira Zeno Plunkett, Lewis, is reported to be seriously ill with cirrhosis of the liver.

New Officers.—Medical Society of Burlington, December 10: president, Dr. Albert C. Moerke; secretary, Dr. Ernest A. Hunt.——Clinton County Medical Society at Clinton, December 7: president, Dr. Harry C. Moffett, Clinton; secretary-treasurer, Dr. George A. Smith, Clinton.——Webster County Medical Society, December 2: president, Dr. William W. Bowen; secretary-treasurer, Dr. George B. Palmer (reelected), both of Fort Dodge.——Iowa City Medical Society, December 4: president, Dr. Charles S. Chase; secretary, Dr. Zella White Steward.——Cass County Medical Society at Atlantic, December 4: president, Dr. Ulysses S. Mullins, Atlantic; secretary-treasurer, Dr. Millard F. Stults, Wiota.——Monona County Medical Society at Onawa, December 3: president, Dr. John A. Thomson, Onawa; secretary, Dr. Frederick S. Spearman, Whiting.

KENTUCKY

Dr. Cecil Dead.—The death of Dr. John G. Cecil, one of the best-known physicians of Louisville, occurred on December 12. A notice will appear in the obituary column next week.

Individual Campaign for Hospital.—In a one-man campaign for two weeks carried on by Lucas Brodhead to raise an endowment of $10,000 for the Woodford Memorial Hospital, Mr. Brodhead secured $9,075.

Personal.—Dr. J. T. Dixon has been elected president of the Owensboro Anti-Tuberculosis Association.——Dr. Ap Morgan Vance, Louisville, who was recently operated on at St. Joseph's Infirmatory, is reported to be convalescent.

County Health Officers Assemble.—A meeting of the county health officers of the state was held in Louisville, December 8 to 11. Among the out-of-town speakers were Dr. J. N. Hurty, commissioner of health of Indiana; Asst.-Surg. James H. Oakley, U.S.P.H.S., and Dr. Cressy L. Wilbur, Washington, director of the Bureau of Vital Statistics.

New Officers.—Fayette County Medical Society at High Oak Sanatorium, December 9: president, Dr. Carl L. Wheeler; secretary-treasurer, Dr. Lee C. Redmon (reelected), both of Lexington.——Oldham County Medical Society at La Grange, December 4: president, Dr. John E. L. Harbold; secretary-treasurer, Dr. Edgar D. Burnett, Anchorage (reelected).——Union County Medical Association at Morganfield, December 3: president, Dr. Carl P. Cottingham, Uniontown; secretary, Dr. Samuel L. Henry, Morganfield.——Henderson County Medical Association at Henderson, December 1: president, Dr. William A. Poole; secretary-treasurer, Dr. B. J. Neary, both of Henderson.——Fayette County Tuberculosis Association at Lexington, November 26: president, Dr. Ernest B. Bradley; vice-presidents, Dr. Frank H. Clarke and Dr. Orrin L. Smith; secretary, Mrs. J. C. Rogers.

MICHIGAN

Sanatorium Opened.—The Ingham County Sanatorium, Lansing, was formally opened, December 1.

Personal.—Dr. Robert L. French, Detroit, has succeeded Dr. Edmond Quandt as physician of Wayne County.——Dr. Sylvester C. J. Ostrom, Saginaw, who has been seriously ill, is reported to be improving.——Dr. Hugh Cary, Detroit, is said to be critically ill.

Cannot Care for Leper.—The secretary of the State Board of Health has informed the health officer of Benton Harbor that the state has no provision for the care of lepers and cannot therefore assume responsibility for Jacob Goldstein. There is no state institution to which Goldstein can be admitted.

New Officers.—Bay County Medical Society at Bay City, December 9: president, Dr. Colin A. Stewart; secretary-treasurer, Dr. George W. Trumble, both of Bay City.——Kalamazoo Academy of Medicine, thirteenth annual meeting, December 9: president, Dr. James E. Maxwell, Decatur; secretary, Dr. Clarke B. Fulkerson, Kalamazoo.——Jackson County Medical Society at Jackson, December 4: president, Dr. William A. Gibson; secretary, Dr. George A. Seybold, both of Jackson. ——Calhoun County Medical Association's twenty-eighth annual meeting at Battle Creek, December 2: president, Dr. Elmer L. Eggleston; secretary-treasurer, Dr. A. Floyd Kingsley, both of Battle Creek.——Ingham County Medical Society at Lansing, November 20: president, Dr. Samuel Osborn; secretary-treasurer, Dr. Frederick M. Huntley, both of Lansing.

NEBRASKA

State Morgue Established.—A state morgue has been established by the State Anatomical Board at the State Medical College, Omaha. Arrangements have been made to preserve the bodies of persons who die unidentified, for sixty days, so that there may be no difficulty about finding or identifying the bodies.

Physician Exonerated.—In the suit of John F. Neely against Dr. Homer Davis, Genoa, the case was taken from the jury by the federal judge, who found the plaintiff had no case. The suit was for $7,500 damages, the plaintiff claiming that a deformity of the finger was due to improper treatment by the physician. The case was handled by the legal department of the State Medical Association.

Laboratory Building Dedicated.—The new laboratory building of the University of Nebraska School of Medicine, Omaha, the first of the series of buildings to be constructed, was formally dedicated October 16. Addresses were made by Dean Wilson O. Bridges, Hon. John M. Grossman, former Dean Henry B. Ward, Regent F. L. Haller and Dr. Howard A. Kelly, Baltimore.——The University of Nebraska has opened a free dispensary at 1716 Dodge Street, Omaha.

Additions to Faculty.—Additions to the faculty of the University of Nebraska recently announced are Dr. Leroy Crummer, professor of clinical surgery; Dr. John P. Lord, professor of orthopedic surgery; Dr. Edson L. Bridges, instructor in medicine; Dr. William N. Anderson, instructor in physical diagnosis; Dr. Oscar T. Schultz, Cleveland, Ohio, instructor in pathology and bacteriology; Dr. A. A. Johnson, instructor in clinical pathology, and Dr. Claude Mitchell, assistant in physiology.

New Officers.—Lancaster County Medical Society at Lincoln, December 6: president, Dr. Henry J. Lehnhoff; secretary-treasurer, Dr. Harry Winnett Orr, both of Lincoln.——Adams County Medical Society at Hastings, December 3: president, Dr. Franklin Schaufelberger, Hastings; secretary-treasurer, Dr. Alma J. Chapman, Ingleside.——Tri-County (Brown, Keya Paha and Rock) Medical Society at Ainsworth: president, Dr. George O. Remy, Ainsworth; secretary-treasurer, Dr. James C. Tucker, Long Pine.

Personal.—Dr. Edmund B. Fulliam, Shelby, has been appointed division surgeon for the Union Pacific Railway. ——Dr. Benjamin R. McGrath, Grand Island, has leased the General Hospital for three years from the Grand Island General Hospital Corporation. The institution will be operated as in the past.——Dr. Tenny T. Harris, Omaha, was elected supreme vice archon of the Pi Beta Phi medical fraternity at its recent meeting in Minneapolis.——Dr. Solon R. Towne of Omaha sustained a fracture of the clavicle and a rib while endeavoring to quiet a fractious horse, October 23.——Dr. John H. Vance, Omaha, was operated on in Rochester, Minn., for the removal of gall-stones, October 9.——Dr. Davis, York, has been appointed pathologist to the Hastings State Hospital.

NEW YORK

New York City

Biggs Resigns.—Dr. Hermann M. Biggs has resigned his office of chief medical inspector in the Department of Health. Dr. Biggs has been in the service of the city for twenty-six years and it is to him that credit is largely due for keeping the Department of Health abreast of the times. His resignation is regretted on all sides.

New Classification in Tuberculosis Clinics.—The new classification and results of treatment recommended by the National Association for the Study and Prevention of Tuberculosis was recently brought up for discussion by the Health Department in response to a request from the secretary of the national association as to whether the Health Department regarded this classification as feasible for use in its clinics. The new classification, which it is believed offers many advantages over the old, will be adopted Jan. 1, 1914.

Raising Funds for Washington Heights Hospital.—A ten days' campaign for the purpose of raising $150,000 for this institution was begun on December 8 and is to be continued for ten days. During the first four days of the campaign $25,982 was raised. The hospital now occupies two made-over dwellings, from which it is soon to be ousted and the fund is for the purpose of erecting a permanent home for the hospital. Last year 7,000 cases were treated, 1,200 ambulance calls answered and 5,000 dispensary cases were treated.

Sale of Mercury Regulated.—The Department of Health has announced that restrictions have been placed on the sale of bichlorid of mercury. The amendment of the Sanitary Code which has been adopted reads as follows: "Bichlorid of mercury, otherwise known as corrosive sublimate, shall not be held, kept, sold or offered for sale at retail in the dry form except in colored tablets individually wrapped, the wrapper to have the word 'poison' in plain letters conspicuously placed, and dispensed in sealed containers of glass, conspicuously labeled with the word 'poison' in red letters." This ruling does not apply to tablets containing one-tenth of a grain or less of the drug.

The Safety Exhibit.—The first International Exhibit of Safety and Sanitation was opened December 11 and continued until December 20 in the Grand Central Palace. Among the features of the exhibition were exhibits of national governments. The United States showed how it cares for soldiers and sailors in times of peace and war, including a field hospital and ward rooms. The actual conditions of camp life were reproduced as regards sanitation, and preventive measures against typhoid fever and yellow fever. The Public Health Service showed the protective measures that are being enforced in mines. The British Home Office and the Board of Trade showed the government activities in England for protection in factories and workshops. Switzerland illustrated the methods that it has adopted for stamping out the white slave traffic. There are more than 350 delegates attending the sessions of the conference, which are held daily in connection with the exhibition.

Babson's Tables on Medical Guesses.—Roger W. Babson's charges, based on statistics from hospital records, accusing physicians of incorrectness in making diagnoses, have been refuted and explained by Dr. Sigismund S. Goldwater of Mount Sinai Hospital. Dr. Goldwater points out the fallacies in Babson's statistics and accounts for the high percentage of "bad guessing" by the fact that there are too few post-mortem examinations in this country. He favors legislation requiring such examinations in all public hospital death cases in order to give physicians the opportunity to correct their mistakes in similar cases that they may have in the future. Dr. Goldwater shows that in New York City post-mortem examinations are had on only from 7 to 24 per cent. of deaths, while in Europe the number ranges from 58 to 97 per cent. Dr. Goldwater also points out that many of the so-called discrepancies are not real but only apparent because the lay mind is not in a position to appreciate all the factors involved.

NORTH CAROLINA

Personal.—Dr. Milton R. Gibson, Maxton, announces that he will remove to Raleigh, January 1, where he will limit his work to the eye, ear, nose and throat.——Dr. James W. Kornegay, Mount Olive, was stricken with cerebral hemorrhage in Goldsboro, December 8, and is reported to be critically ill.

Dairies Must Be Sanitary.—The supreme court of North Carolina, in the case of the City of Asheville against H. L. Nettles, dairyman, has sustained the Asheville milk ordinance, prescribing a license tax of one dollar per cow and specifying standard sanitation to be observed in the management of dairies and the marketing of milk.

New Officers.—Third District Medical Society, first annual meeting in Wilmington, December 3: president, Dr. James L. Nicholson, Richlands; secretary-treasurer, Dr. Earnest S. Bulluck, Wilmington.——Guilford County Medical Society at Greensboro, December 5: president, Dr. John A. Williams; secretary-treasurer, Dr. Parran Jarboe, both of Greensboro.——Seventh District Medical Society at Lincolnton, December 5: president, Dr. John B. Wright, Lincolnton; secretary, Dr. Robert H. Lafferty, Charlotte. The next meeting will be held in Concord.

OHIO

Place of State Meeting Fixed.—The Ohio State Medical Association is said to have accepted the invitation tendered it by Columbus, and will meet in that city May 5 to 7, 1914, holding its sessions in Memorial Hall.

Personal.—Dr. Howard M. Francisco has been appointed assistant physician and pathologist at the Cleveland State Hospital.——Dr. Sherman Wolcott suffered a cerebral hemorrhage at his home near Gahanna, September 8.——The office of Dr. Frederick L. Lewis, Akron, was destroyed by fire, November 26.

New Officers.—Ashland Academy of Medicine, organized December 5: president, Dr. Robert C. Kinnaman; secretary-treasurer, Dr. Jacob Fridline.——Tuscarawas County Medical Society: president, Dr. Robert A. Goudy, Newcomerstown; secretary-treasurer, Dr. George T. Haverfield, Uhrichsville.——Montgomery County Medical Society at Dayton, December 5: president, Dr. Rufus C. Pennywitt; secretary, Dr. Charles C. McLean (reelected), both of Dayton.——Clark County Medical Society at Springfield, December 8: president, Dr. James E. Studebaker, Springfield.——Wyandot Medical Society at Upper Sandusky, December 4: president, Dr. George O. Maskey; secretary, Dr. Arthur N. Smith, both of Upper Sandusky.

Society Proceedings.—The Academy met at the Literary Clubrooms, Monday evening, December 15. The nominating committee submitted the following names of members to act as official candidates for the coming year: president, Dr. A. B. Thrasher; first vice-president, Dr. Sidney Lange; second vice-president, Dr. Dudley Palmer; secretary, Dr. C. T. Souther; treasurer, Dr. A. G. Drury. The program for the evening was one of particular interest. Dr. Paul G. Woolley read a paper on "Multiple Hyalo-Serositis"; Dr. Oscar Berghausen, on "Syphilis of the Liver"; Dr. E. C. Steinharter, on "Experimental Gastric Ulcer in the Rabbit."——Dr. J. Edward Pirrung was the host at the last meeting of the Obstetrical Society which met at the Alms Hotel December 11. A very interesting paper was read by Dr. Bonifield, dealing with "After-Treatment of Abdominal Section." A few of the many debatable theories advanced in the paper were early purgation following abdomnial section, denial of sedatives for the relief of pain and the substitution of hot water by mouth or rectum to take the place of ice for the relief of thirst. The paper was very freely discussed by every member present, after which a bountiful lunch was served.

Cincinnati

Prevention of Cancer.—At the annual celebration of the Founders and Emory Memorial Day at the Ohio Mechanics' Institute a lecture was delivered, December 16, by Dr. E. Gustav Zinke on "Cancer, Its Cause, Prevention and Cure."

Personal.—Dr. Simon P. Kramer has been appointed professor of clinical surgery in the University of Cincinnati.——Dr. Henry L. Woodward has been appointed senior physician to the Cincinnati Hospital, vice Dr. Frederick Forchheimer, deceased.——Drs. S. Oscar Berghausen, Clement C. Fihe, Starr Ford and Arthur E. Osmond have been added to the junior staff of the institution.

Councilor District Meeting.—On December 8, the First Councilor District Medical Association held its annual meeting. Clinics were arranged at the various hospitals in the morning and in the afternoon a session was held in the amphitheater of the City Hospital, where addresses were made by the president, Dr. Herschel Fisher, Dr. A. W. Binekley of the Ohio State Liability Board of Awards, Drs. Martin H. Fischer and Sidney Lange, Cincinnati, and Dr. John T. Geraghty, Baltimore. The evening session of the society was held by invitation with the Cincinnati Academy of Medicine, and at this session addresses were delivered by Dr. George A. Fackler, president of the Ohio State Medical Association, and Dr. George H. Simmons, Chicago.

Sex Education Discussed.—At the meeting of the Medico-Civics Society, November 20, the paper of the evening was presented by Dr. Philip Zenner on "Sex Education in the Public School." The speaker treated the subject from the point of view of home instruction and school instruction, preferring the former and emphasizing the necessity for the latter, because of the unwillingness or inability of parents to undertake the task of imparting proper knowledge along these lines to their children. Dr. Elizabeth Campbell opened the discussion and urged that the teachers be especially trained for this work in order to be able to present the subject to their pupils in a proper and convincing manner. The general consensus of opinion appeared to be that while the necessity for sex education in the public schools is at once urgent and apparent, yet the matter is one that requires so much tact, special thought and preparation on the part of the educator that for the present, at least, it should be postponed.

PENNSYLVANIA

Hospital Building.—The Mercey Hospital, Johnstown, plans to build a new administration and ward building, to cost about $50,000.

Home for Incurables Needed.—In the annual report of General Agent Bromley Wharton to the State Board of Public Charities, recommendation was made for the establishment of a state institution especially devoted to the care of cases of incurable diseases, such as cancer and other wasting disorders.

Personal.—Dr. F. B. Thomas has returned from Europe and opened an office in Dorranceton.——Dr. Richard G. Burns, Pittsburgh, has been appointed superintendent of the bureau of sanitation in the department of public health at Pittsburgh, vice Dr. H. K. Battey, deceased.——Dr. Charles J. Keim has been elected burgess of the borough of Cabasauqua.

Library Presented to Medical School.—The library of the late Prof. Ernest Ziesler, for many years professor of pathology at the University of Freiburg, purchased for the University of Pittsburgh by Mr. Richard Beatty Mellen was formally presented to the University at a meeting held in the University Club, Pittsburgh, December 5. The addresses of the evening were given by Dr. William H. Welch, Baltimore, and Mr. Harrison W. Carver, Pittsburgh.

New Officers.—Oil City Medical Club, December 5: president, Dr. Frank B. Jackson; secretary, Dr. Sylvester W. Sellew.——Physicians' Association of the Bethlehems, December 4: president, Dr. Milton H. Herbein, South Bethlehem; secretary, Dr. Christian A. S. Kemper, Bethlehem.——Jefferson Medical Club Alumni Association of Northeastern Pennsylvania at Scranton, December 4: president, Dr. James N. White, Scranton; secretary, Dr. Frederick L. Van Sickle, Olyphant.

Health Commissioner Sues Town.—State Health Commissioner Dixon on December 3, instituted suit against the town of Coudersport for the recovery of $145,000 in fines. It is charged that the borough failed to observe a decree of the governor, attorney general and commissioner of health directing it to "discontinue the discharge of sewage into a stream draining into the Allegheny River. A fine of $500, and a penalty of $50 a day for each day of failure to observe the decree is claimed.

Philadelphia

Bazaar for Ambulance.—The Hospital of the Woman's Medical College held its seventh annual bazaar, December 6, the proceeds from which are to be devoted to the purchase of an ambulance.

Personal.—Dr. Hubley R. Owen has been reinstated as chief police surgeon of the city.——Dr. William Campbell Posey, who has been seriously ill with pneumonia, is reported to be convalescent.——Dr. Arthur Dare sailed for Europe, December 12.

TEXAS

Health Bulletin Adopted.—Gaines, Hunt and Fayette counties have adopted the monthly bulletin of the State Board of Health as a supplementary text-book on health.

Sanatorium Addition.—The annex to the Scott and White Sanitarium, Temple, erected at a cost of $50,000, which is nearly ready for occupancy, will double the capacity of the institution which will then be able to accommodate two hundred patients.

Personal.—Dr. Bascom Lynn, superintendent of the State Tuberculosis Colony, Carlsbad, has resigned, to take effect January 1.——Dr. L. S. McKane, special representative of the State Board of Health, has returned after three months in Tampico, Mex.——Dr. Malone Duggan, San Antonio, is reported to be ill in Johns Hopkins Hospital, Baltimore.

Quarantine Edict Revoked.—The governor in a proclamation dated November 28 revoked his quarantine proclamation of April, 1913, which imposed certain conditions on all vessels from all ports south of 25 degrees north latitude and entering ports of this state, this proclamation to take effect on and after December 1. The section relating to entrance of vessels infected with contagious diseases into Texas ports will remain in full force, and quarantine is furthermore declared "against all person or persons infected or liable to be infected with small-pox, yellow fever, cholera, typhus fever, bubonic plague or other dangerous communicable diseases, whether within or without the state of Texas."

New Officers.—Grayson County Medical Association at Sherman, December 3: president, Dr. Otto Carl Ahlers, Sherman; secretary-treasurer, Dr. Davis Spangler.——McLennan County Medical Society at Waco, December 2: president, Dr. James M. Witt; secretary-treasurer, Dr. D. L. Eastland, both of Waco.——Jefferson County Medical Society at Beaumont, December 1: president, Dr. Louis Goldstein; secretary-treasurer, Dr. Wilbur F. Thomson, both of Beaumont.——Dallas County Medical Society at Dallas, December 1: president, Dr. Calvin R. Hannah; secretary, Dr. Royal S. Loving (reelected), both of Dallas.——Jasper and Newton County Medical Society at Kirbyville, November 25: president, Dr. B. A. Swinney, Newton; secretary, Dr. Dru McMickin, Kirbyville.——Trinity County Medical Society at Trinity, November 20: president, Dr. Charles H. Bradley, Groveton; secretary-treasurer, Dr. William H. Pope, Jr., Trinity.——El Paso-Big Springs Medical Association at Abilene, November 18: president, Dr. Granville T. Hall, Big Springs; secretary, Dr. W. R. Smith, Colorado.——San Antonio Academy of Medicine, organized November 10: president, Dr. Charles A. R. Campbell; secretary-treasurer, Dr. R. A. Roberts.

VIRGINIA

Presentation to Secretary.—At a meeting of the South Piedmont Medical Society in South Boston, the third Tuesday in November, a handsome silver service was presented by the society to its secretary, Dr. George A. Stover, South Boston.

The James Thomas Lectures.—Dr. Jacques Loeb, director of the department of experimental biology of the Rockefeller Institute for Medical Research, conducted the thirty-fourth annual course at Richmond College under the James Thomas lecture endowment, December 11 and 12. The first lecture was on "Artificial Parthenogenesis" and the second on "Determinism in the Animal World."

New Officers.—Richmond Academy of Medicine and Surgery, December 9: president, Dr. Charles V. Carrington; secretary, Dr. Mark W. Peyser (reelected for the twenty-first term).——Medical Faculty of Petersburg, November 21: president, Dr. William C. Powell; corresponding secretary, Dr. George H. Reese; recording secretary, Dr. Leverett S. Early.——Roanoke Academy of Medicine: president, Dr. William L. Powell; secretary, Dr. William W. S. Butler, Jr.

GENERAL

Tri-State Association to Meet.—The sixteenth annual session of the Tri-State Medical Association of the Carolinas and Virginia will be held in Wilmington, N. C., Feb. 18 and 19, 1914, under the presidency of Dr. Southgate Leigh, Norfolk, Va. Dr. Charles T. Harper, Wilmington, is chairman of the committee of arrangements.

Soo Line Surgeons Hold Meeting.—At the seventh annual meeting of the Minneapolis, St. Paul and Sault Ste. Marie Railway Surgical Association held at Milwaukee, December 5 and 6, the following officers were elected: Dr. John M. Dodd, Ashland, Wis., president; Dr. John Steele Barnes, Milwaukee, vice-president; Dr. John H. Rishmiller Minneapolis, secretary-treasurer (reelected), and Drs. John H. Rishmiller, Minneapolis; Chas. A. Steward, Duluth; Chas D'A. Wright, Minneapolis; Alexander J. McCannel, Minot, N. Dak., and John M. Crafts, Minneapolis, censors. Sault Ste. Marie, Mich., was selected as the next place of meeting.

Infectious Diseases.—During the first week in December contagious diseases have been reported, among others, from the following places: Diphtheria: Minneapolis, 160 cases; Litchfield, Minn., twenty-four cases; Augusta, Kan.; Wilkes-Barre, Pa.; Detroit, 200 cases; defective methods were found in the manner of releasing from quarantine, which was said to account for the spread of the disease. Dr. Edward H. Hayward, bacteriologist of the health department, resigned.

The two-culture method has been adopted: Woodland, Cal.; Grass Valley, Nev.; Davenport, Iowa. At Jefferson City, Mo., sixteen prisoners were barred from the state penitentiary on account of exposure to a case of diphtheria in the jail at St. Louis before being taken to Jefferson. Small-pox: In order to prevent the spread of the epidemic at Joliet, Ill., almost universal vaccination was enforced by the city and health authorities. December 2 Indianapolis had eight cases reported in forty-eight hours. Shelbyville, Ky., reports a number of cases. Walla Walla, Wash., has a number of cases. DeRidder, La., where compulsory vaccination has been enforced. Kansas City, Mo. Toledo, Ohio, where a third school has been closed on account of a few cases. At Dutzow, Mo., the school was closed. Scarlet fever: Liberty, Tioga County, Pa.; Wilkes-Barre, Pa.; Mount Pleasant, Pa., school closed. An outbreak occurred among the Indians on the Crow Reservation, Montana, and quarantine of the reservation was declared by the State Board of Health.

Civil Service Examination.—The United States Civil Service Commission announces an open competitive examination for medical assistant, for men only, on Jan. 12, 1914. From the register of eligibles resulting from this examination certification will be made to fill a vacancy in this position in the Bureau of Chemistry, Department of Agriculture, Washington, D. C., at $1,800 a year, and vacancies as they may occur in positions requiring similar qualifications, unless it is found to be in the interest of the service to fill any vacancy by reinstatement, transfer or promotion. The duties of this position will be to study the claims and representations made in conjunction with proprietary remedies, look up medical literature, assist in preparing cases, etc., under the Food and Drugs Act. A knowledge of French and German is desirable. Competitors will not be assembled for examination, but will be rated on the following subjects, which will have the relative weights indicated:

Subjects	Weights
1. General education and medical training	35
2. Practical or professional experience and fitness	45
3. Publications or thesis	20
Total	100

Graduation from a medical school of recognized standing and at least three years' subsequent experience in the practice of medicine, or two years' subsequent experience in either pharmacological investigations or the actual examination of drug products with reference to the claims made therefor by manufacturers, are prerequisites for consideration for this position. If a thesis is submitted under Subject 3 it must present the results of original investigational work on the part of the applicant in some phase of medicine or pharmacology. Statements as to training, experience and fitness are accepted subject to verification. Applicants must have reached their twenty-fifth but not their forty-fifth birthday on the date of the examination. Under an act of congress applicants for this examination must have been actually domiciled in the state or territory in which they reside for at least one year previous to the date of the examination. This examination is open to all men who are citizens of the United States and who meet the requirements. Persons who meet the requirements and desire this examination should at once apply for Application Form 304 and special form, to the United States Civil Service Commission, Washington, D. C.; the secretary of the United States Civil Service Board, Post Office, Boston, Mass., Philadelphia, Pa., Atlanta, Ga., Cincinnati, Ohio, Chicago, Ill., St. Paul, Minn., Seattle, Wash., San Francisco, Cal.; Customhouse, New York, N. Y., New Orleans, La., Honolulu, Hawaii; Old Customhouse, St. Louis, Mo.; or to the chairman of the Porto Rican Civil Service Commission, San Juan, P. R. No application will be accepted unless properly executed and filed, in complete form, with the commission at Washington prior to the hour of closing business on Jan. 12, 1914. In applying for this examination the title "United States Civil Service Examination, Medical Assistant (Male)" should be used.

CANADA

Library to Be Established.—The Medical Council of Saskatchewan has decided to establish a medical library at Saskatoon and not at Regina as originally planned.

Typhoid in Halifax.—Halifax, N. S., has been experiencing an epidemic of typhoid fever. An emergency hospital for fifty patients has been secured, and an investigataion is proceeding into the cause of the outbreak.

Instruction in Tuberculosis.—For the benefit of the students of the Manitoba Medical College, the provincial sanatorium at Ninette will be utilized for clinical instruction in tuberculosis. This is the first departure in this direction in Canada.

Prize for Research Work.—A prize to be awarded annually or biennially has been established in connection with research work in the University of Manitoba. It will be for the essay on the best work done in connection with physiology or physiological chemistry.

Personal.—Prof. J. George Adami, McGill University, Montreal, addressed the Denver County Medical Society December 12 on "Intestinal Stasis."—Dr. John Taylor Fotheringham, Toronto, was the guest of the evening at the annual dinner of the Oxford County Medical Association, October 29.

Will Accept Registration Certificates.—The Manitoba Medical Council has decided to accept for registration under the provisions of the Dominion Medical Act, all applicants who present a certificate of registration on the Dominion Medical Council register, whether the same has been obtained by examination or by virtue of ten years' previous practice in any province, subject only to proof of identity, and payment of the registration fee of $100.

Hospital News.—Toronto city council has made a supplementary grant of $8,272.20 to the Hospital for Sick Children.——Forty-seven patients were treated at the Victoria Hospital, Fredericton, N. B., in October. One death occurred.——The Royal Victoria Hospital at Barrie, Ont., has just completed its sixteenth year. During the past year 418 patients received treatment. There were thirty-nine births in the year and twenty-six deaths.——The General Hospital, Welland, Ont., treated 437 patients during the year ended September 30. Twenty-five deaths and seventeen births occurred. More room is to be provided for this hospital and a nurses' home in the immediate future.——Toronto has now a measles hospital with accommodation for thirty patients. It was formerly the Nurses' Home at the old General Hospital.——The Montreal Dispensary will erect a new building.——The central building of St. Boniface Hospital, Winnipeg, is to be rebuilt.——St. Paul's Hospital at Saskatoon, Sask., newly opened, has accommodation for 100 patients. The cost of the building was $17[illegible],000.——The Waddell Memorial Hospital at Canora, Sask., has been completed and Dr. Gray of Montreal has been appointed superintendent.——Vancouver General Hospital will soon add an administrative building and nurses' home. The former is to cost $80,000 and the latter $115,000.

LONDON LETTER

(From Our Regular Correspondent)

LONDON, Dec. 6, 1913.

The National Insurance Act

The magnitude of medical services under the national insurance act is shown by some figures recently given by a member of the government, Mr. Churchill, who asserts that no greater administrative achievement has stood to the credit of the civil service of any country than the establishment in a few months of a tremendous universal system and organization of insurance. Although the act has been working for only nine months, 13,700,000 persons have been insured, and their affairs are being administered through 233 insurance companies and upward of 23,500 societies; 22,000,000 visits have been paid by 20,000 panel physicians, and nearly 12,000,000 cases have been treated. The cost of medical benefit has been $22,500,000. Sanatorium benefit has been provided for 36,000 persons.

The act is regarded by various sections of the profession with very different feelings. It cannot be denied that those engaged in industrial practice have benefited financially. Remuneration is much better than under the old contract practice of societies—nearly twice as much—and the physician is free from the domination of the clique which rules every lodge and has power to deprive him of his appointment because of some unreasonable charge by a member. Now if a patient is not satisfied with his physician, all he can do is transfer himself to the panel of another doctor. The increased remuneration obtained under the act has attracted physicians into industrial practice in such numbers that there is a shortage in other directions. Appointments under education and asylum authorities, which would have been sought by fifty applicants before, have been advertised in the medical journals for six or eight months without bringing a single answer, although the salaries have been doubled. Formerly young physicians were glad to take appointments at salaries ranging up to $1,500 a year. On the other hand, considerable dissatisfaction prevails in the ranks of those who have not accepted service under the act (non-panel physicians). They

complain that their patients are compulsorily transferred to panel physicians, though they appear in many cases to have benefited instead of losing financially. This paradox is explained by the fact that at the time of the struggle of the British Medical Association with the government political feeling ran high, and the conservative press as well as a section of the profession held up to opprobrium those who would take service under the act, alleging that they were an inferior order of practitioners. Moreover, the large and unnecessary amount of clerical work thrust on physicians at the inauguration of the act proved most onerous and made inroads on the time required for professional work. The opposition press exaggerated the evil and represented panel physicians as so overwhelmed with work that they could not give proper attention to patients. The result was that the fact that a physician was not on the panel was a recommendation. He was considered to be a superior man, and to have sufficient time to attend to private patients. Though medical benefits under the act are working smoothly and the number of complaints is exceedingly small considering the enormous number of people involved, the panel practice is in many ways an improvement on the old contract practice; it still has some of the evils inseparable from contract practice. Time is wasted in attending hypochondriacs and others with very little the matter who wish to avail themselves of the free and unlimited drugging provided. The incentive to individual effort in the case of private patients is wanting. Examination tends to be perfunctory and treatment routine.

Radium for Hospitals

At a meeting of the governors of the Middlesex Hospital, Prince Alexander of Teck announced that he had made a suggestion to the council of King Edward's Hospital Fund with the object of securing a more economical provision of radium for use in the London hospitals. In order to avoid the capital of these hospitals being drawn on for the purpose he asked the council to purchase a quantity of radium and allow all the London hospitals to utilize the emanations which could be collected from it at the price of their production. The Middlesex Hospital is the only one of the general London hospitals which contains special wards for the treatment of cancer and a special laboratory for its investigation. It has recently been compelled to withdraw from its capital $5,000 for the purchase of radium. Sir Alfred Pearce Gould, surgeon to the hospital, pointed out the necessity for care in inferring that a case of cancer had been cured by radium, for the disease sometimes underwent spontaneous cure. Recently a man had been discharged from the hospital in robust health although he had been ill for two years with cancer which was pronounced uncurable. Without radium or any specific treatment or operation he recovered. In some cases they had the most striking results; one application of a tube of radium had been followed by rapid disappearance of malignant growth. On the other hand, similar growths had been treated in the same way with no improvement. He had also known half of an extensive area of the disease quickly removed by radium while the other half was entirely unaffected. In some cases burns occurred very rapidly. It would not be accurate to say that radium was a cure for cancer in the same way that drugs were specifics for some diseases. So far as they knew there was no hope that radium would be able to deal with cases in which cancer had diffused itself among the internal organs, but so long as the disease was localized the results were sufficient to say that radium was a more hopeful remedy than anything except operations.

The Leprosy Problem in the British Empire

Dr. H. Bayon, research bacteriologist to the union government of South Africa, has delivered a lecture with the object of having the government institute a system of registration and segregation of lepers. He said that at present there were from twenty-five to fifty lepers in England, and the simple precautions taken by these unfortunates was sufficient to prevent contagion. In India, on the other hand, there had been an increase of lepers from 100,000 to 110,000. In South Africa the increase was more marked. In Basutoland the principal medical officer counted 300 lepers twenty-five years ago. Last year they numbered from 800 to 900. He submitted that only by segregation could the disease be coped with. Sir Malcolm Morris said that the lepers in London were hunted from one lodging-house to another. Their pitiable condition had caused some benevolent persons to attempt to provide some small institution in which they could be segregated and cared for, but it was necessary to proceed with care because if it became known that a comfortable home was provided for lepers in London they would be attracted here from other countries.

BERLIN LETTER

(From Our Regular Correspondent)

BERLIN, Nov. 23, 1913.

Personal

On the occasion of his transfer from Greifswald to Berlin, Professor Loeffler was elected an honorary citizen of the city of Greifswald.

The Struggle between the Insurance Societies and Physicians

The development of this struggle is going on in the form decided on by the Aerztetag. The present contracts are not being renewed, so that a great number of the Krankenkassen have no longer any physicians under contract to attend their policy-holders. It is reported from various sources that an attempt is being made to resume negotiations for a new agreement between the two parties, but it is scarcely to be assumed that our highest imperial authority will take this step.

Foundation of an International Society for Sex Investigation

An international society for sex investigation was founded in Berlin November 16, the Internationale Gesellschaft für Sexualforschung. The organizations which are active at present in the field of sexual investigation are chiefly concerned with practical and humanitarian purposes, such as hygienic, educational and legal, social and moral reform. The new society is to devote itself to a purely scientific investigation of sexual problems. For this reason the man at the head of the society is not a physician, but Prof. J. Wolff, who is professor of economics at the technical high school in Charlottenburg (*Lehrender Nationalökonom*). It is also a notable fact that a professor of theology in the Berlin University belongs to the executive committee. In the meeting for organization he emphasized the fact that he hoped for advantages from the new society in three fields, psychology, economics and history.

Statistics in Regard to Venereal Disease in Germany

The association of German statisticians has determined to secure information with reference to the number of venereal patients at present under medical treatment. As experience has shown and as every practitioner knows, such an investigation will not give the entire number of patients, but the knowledge obtained from the large number of cases available will be of value. A committee appointed by the association in conjunction with the executive committee of the German association for combating venereal diseases has elaborated a plan by which it is to be determined how many persons with venereal disease were under medical treatment in the period from November 20 to December 20, 1913, inclusive. This is determined by including in a table the number of patients visiting the office in this time in such a manner that each patient is reckoned only once. Only chancroid, gonorrhea and syphilis with their consequences are reckoned among venereal diseases. All non-venereal genital affections, such as acuminate condyloma, non-gonorrheal urethritis, herpes genitalis, etc., are not included. In view of the extraordinary importance of tabes and paralysis, separate columns are provided for these with a distinction between old cases and those treated for the first time. The cases treated in the public hospitals are collected directly by the statistical bureau.

Public Care of the Sick in Berlin for 1912

There were treated in the public municipal hospitals 60,578 persons, which is nearly 2,300 fewer than in the previous year. On the average there were 4,165 patients in the hospitals daily, which is on the average nearly 200 fewer per day than in the previous year. The six hospitals occasioned an expense of $1, 837, 500 (7,350,100 marks) with only $19,629 (78,517 marks) receipts, so that the entire remainder of over $1,800,000 (7,250,000 marks) is to be reckoned as expense. To this must be added the interest on the municipal capital involved, so that the total expense reaches $2,187,048 (8,748,193 marks). The average daily expense for each patient is 98 cents (3.93 marks), as compared with 91 cents (3.66 marks) in the previous year. The actual cost for each patient including the interest on the capital has risen from $1.33 (5.32 marks) daily to $1.43 (5.72 marks), a not inconsiderable increase.

German Universities in 1913

The number of students matriculated in the universities in the German empire, which has doubled since 1896, has risen further during the last summer. As compared with the previous year, the increase is 7,851, and compared with the summer semester of 1903 is about 24,000. The increase during the last ten years is as great as the entire attendance at the German universities thirty years ago. The annual increase for the last year is somewhat smaller than the previous year, so that it may be assumed that the high point of the increase has been passed, which in view of the overfilling of many learned professions may be regarded as desirable. If to the number of matriculated students, the number of those admitted to the lectures is added (3,079 men and 1,027 women) there are at present attending the German universities 64,462 persons (56,910 men and 3,436 women as compared with 56,602 men and 2,959 women in the previous year). As to the attendance of the different departments, theology showed a marked increase with 3,882 students as compared with 3,338 in the previous year, but the principal increase is seen in the department of medicine, to which university students have given the preference for some years. The medical departments have 14,750 students as compared with 13,409 in the previous year and 8,282 five years ago. The next largest increase is in economics and agriculture. Dentistry decreased as a result of higher entrance requirements and longer time of study from 789 to 655, and law from 11,087 to 10,396, and finally students of philosophy from 16,644 to 15,471.

BUDAPEST LETTER

(From Our Occasional Correspondent)

BUDAPEST, Nov. 29, 1913.

Preventive Inoculations against Typhoid

The chief medical officer of the county of Zemplen asked the minister of public hygiene (also minister of internal affairs) to provide his county with free vaccine in order that those who come in contact with typhoid patients (as nurses and persons engaged in such occupations as earth-working and privy-cleaning) might be vaccinated. At present the chief medical officer will refrain from making vaccination obligatory; but thinks that the state ought to provide free vaccine, which should be prepared in the bacteriologic laboratory of the university. The minister accepted the proposal with great pleasure, and steps were taken immediately to prepare sufficient vaccine in the ministerial laboratory to meet the requests of any counties for vaccine.

Lack of Cadavers for Dissection in the Anatomic Institutions

A new resolution has been offered at the workmen's insurance office, according to which any member of the sick-clubs who dies without relatives shall be buried by the respective club. As the number of members in Budapest amounts to about 450,000 (out of a population of 900,000), the new rule threatens medical teaching with a cadaver famine, the more so, as the Chevra Kadisha, a Jewish charitable society, provides funerals for all Jewish subjects whose funeral is not attended to by relatives. Considering that the number of medical students amounts to 2,800 in the Budapest University, while the number of cadavers at the disposal of the anatomic institutions had amounted to only 500 a year, it could justly be feared that the successful teaching of anatomy, operative surgery, etc., would be endangered should the resolution of the workmen's insurance office come into force. To prevent this Anton Genersich asked the minister of public instruction to frame a new bill providing that all cadavers not claimed by relatives may be used for purposes of instruction.

Eclampsia an Anaphylactic Disease

Dr. Oscar Vertes, assistant of the obstetric clinic of the Kolozsvar University (Hungary) nas carried out extensive investigations in the bacteriologic laboratory of the Friedrichshain General Hospital (Berlin) as to the pathogenesis of eclampsia. He sums up the results of his investigations as follows: The pregnant organism is on account of the absorbed villous element (proved by Schmorl) in an anaphylactic state. That the chorionic villi which contain both racial (*arteigen*) and individual (*körpereigen*) albumins, are actually capable of producing eclampsia, has been clearly demonstrated in his experiments. Certain similarities have beeen shown between anaphylactic manifestations and the symptoms of eclampsia. The experimental animals which died have similar organic changes to those of persons dying with eclampsia. The albuminuria also strengthens the assumption that eclampsia is a manifestation of anaphylaxis.

Marriages

ALEXANDER CONTEE THOMPSON, M.D., Greeley, Colo., to Miss Mabel Chesley Berry of Washington, D. C., at Greeley, November 26.

JESSE LEE HAGADORN, M.D., to Miss Phyllis Ivy Maughan, both of Los Angeles, at San Bernardino, Cal., December 1.

ASHER REID MCMAHON, M.D., Memphis, Tenn., to Miss Geraldine Sembower of Bloomington, Ind., December 6.

JAMES ALBERT HONEIG, M.D., Cambridge, Mass., to Miss Florence Imogene Graham, at Boston, December 6.

EARLE EDWARD TILTON, M.D., Boston, to Miss Mary Christie Stephenson of Port Deposit, Md., December 3.

EDGAR DALE DOWNING, M.D., San Francisco, to Miss Marjorie Fraser Cole of Fallon, Nev., December 1.

NATHANIEL A. THOMPSON, M.D., Denver, to Miss Isabel McKenzie of Boulder, Colo., November 28.

CHARLES HENRY SMITH, M.D., Weston, Ore., to Miss Zona M. Sapp of Portland, Ore., November 26.

HENRY F. MIKEL, M.D., Columbia, Mo., to Mrs. Lida M. Ashton of Peabody, Kan., December 5.

JAMES ALBERT CORSCADEN, M.D., to Miss Julia Thomas, both of New York City, December 16.

NELLE MALVINA COLE, M.D., and George Owen Reed, both of Michigan City, Ind., November 29.

WARREN J. MILLER, M.D., to Miss Ina C. Bowman, both of Philadelphia, December 4.

CHARLES M. RAYMOND, M.D., Edgewood, R.I., to Mrs. A. C. Newell, November 8.

Deaths

William Henry Wishard, M.D., one of the oldest, most honored and best beloved practitioners of Indiana, died at his home in Indianapolis, December 9, aged 97. He graduated in medicine in the Indiana Medical College, La Porte, in 1849 and was given the ad eundem degree of M.D. by the Medical College of Indiana, Indianapolis, in 1877. He was one of the founders of the Indiana State Medical Society in 1849 and was the last survivor of its charter members. During the Civil War he served as surgeon of the 59th and 83d Indiana Volunteer Infantry. He was for many years a member of the American Medical Association, served as president of the Indiana State Medical Association in 1889 and as president of the Indianapolis Medical Society in 1891. It is said to have been through Dr. Wishard's efforts that President Lincoln issued the first order for the removal of soldiers, disabled by illness or wounds, from the seat of war to their Northern homes. He continued in active practice in Indianapolis until seven years ago and up to within a few months he attended meetings of the local medical society, where he was reverenced as a fine specimen of the old school doctor. The death of Dr. Wishard removes a stalwart pioneer in medicine of the Middlewest, a gentleman of the old school, a practitioner who stood for the highest ideals, and a friend always loyal and true. The Indianapolis Medical Society at a special meeting, December 11, adopted suitable resolutions regarding the death of Dr. Wishard.

John Green, M.D. Harvard Medical School, Boston, 1866; LL.D. (honorary) Washington University, 1905; University of Missouri, 1906; a member of the American Ophthalmological Society, and American Otological Society; ophthalmic surgeon to St. Luke's Hospital, St. Louis; professor of ophthalmology in the Medical Department of Washington University since 1886, and at the time of his death professor emeritus; a pioneer oculist of the Southwest; surgeon of volunteers during the Civil War; one of the founders of the American Ophthalmological Society, Harvard Club of St. Louis, St. Louis Archeological Society and St. Louis Academy of Science; died at his home in St. Louis, December 7, from pneumonia, aged 78.

Archibald Dixon, Jr., M.D. Bellevue Hospital Medical College, 1891; of El Paso, Tex.; vice-president of the Kentucky State Medical Association, health officer and formerly city physician of Henderson, Ky.; acting assistant surgeon U. S. Army; a specialist on diseases of the lungs; died at his home, October 31, aged 44.

Frank Le Moyne, M.D. University of Pennsylvania, Philadelphia, 1863; a member of the Medical Society of the State of Pennsylvania; brigade surgeon during the Civil War and brevetted lieutenant-colonel for conspicuous gallantry in action; once president of the Allegheny County Medical Society; chairman of the Pittsburgh Water Commission; a trustee of the Elizabeth Steel Magee Hospital; one of the founders of the Pittsburgh Hospital for Children and surgeon to that institution and the Western Pennsylvania Hospital; died at his home in Pittsburgh, December 1, aged 74.

Jerome Dwelly, M.D. Harvard Medical School, 1847; a member of the Massachusetts Medical Society; a practitioner of Fall River for more than sixty years; once president of the Bristol South District Medical Society; one of the witnesses of the original demonstration of ether anesthesia and the first to administer it in his own community; first city physician of Fall River; medical examiner of Bristol County for fourteen years; one of the finest types of the old-time practitioner; died at his home in Fall River, December 4, aged 90.

Rockwood Sager, M.D. Rush Medical College, 1879; a member of the Illinois State Medical Society; for thirty-four years a practitioner of Rockford; died at his home in that city, December 2, from brain tumor, aged 57. At a meeting of the Winnebago County Medical Society December 4, resolutions were unanimously adopted expressing regret at the death of Dr. Sager and sympathy for his family.

Harry M. Hayes, M.D. Rush Medical College, 1894; a Fellow of the American Medical Association, and President of the Peoria City Medical Society; formerly commissioner of health in Peoria; died in the Proctor Hospital in that city, December 2, from typhoid fever, aged 42. At a meeting of the Peoria City Medical Society, December 6, resolutions of regret and sympathy were unanimously adopted.

George Henderson, M.D. Howard University, Washington, D. C., 1885; a member of the Medical Association of the District of Columbia; formerly a member of the Association of Military Surgeons of the United States; a veteran of the Civil War; for twenty-three years Surgeon-General of the National Guard of the District of Columbia; died at his home in Washington, November 27, aged 70.

Warren Oscar Plympton, M.D. College of Physicians and Surgeons, New York City, 1888; formerly professor of surgery in the New York Postgraduate Medical School; attending surgeon to the Daisy Field Hospital, Englewood, N. J., and consulting surgeon to the Mary Immaculate Hospital, Jamaica, L. I., and the Tarrytown Hospital; died at his home in Westport, Conn., November 19, aged 55.

Nathaniel Heath Street, M.D. University of Virginia, Charlotteville, 1880; New York University, New York City, 1881; a member of the Medical Society of the State of North Carolina; died at his home in New Bern, December 1, from the effects of a gunshot wound of the brain, self-inflicted, it is believed with suicidal intent, while suffering from melancholia due to ill health, aged 56.

John Todd, M.D. Pennsylvania Medical College, Gettysburg, 1857; for fifty-six years a practitioner of Montgomery County, Pa.; for several years a burgess of Pottstown, and for nine years a member of the town council; president of the medical staff of Pottstown Hospital since the establishment of the institution; died at his home, October 27, from senile debility, aged 83.

Henry J. Evans, M.D. Hahnemann Medical College, Philadelphia, 1881; president of the Maryland State Homeopathic Society in 1899 and president of Maryland State Board of Medical Examiners in 1888; consulting physician to St. Luke's Hospital; formerly of Baltimore; died at his summer home in Hollidaysburg, Pa., November 30, from pernicious anemia, aged 58.

Frederick Ogden Marsh, M.D. Miami Medical College, Cincinnati, 1884; professor of chemistry and toxicology in his alma mater; of Cincinnati; who was committed to Longview Hospital, October 7, suffering from melancholia; died in that institution, November 24, from the effects of wounds believed to have been self-inflicted with suicidal intent, aged 54.

Hugh Spencer Williams, M.D. Northwestern University Medical School, 1894; LL.D., D.D., prominent as a clergyman of the Cumberland Presbyterian Church; died at his home in Memphis, Tenn., December 3, from nephritis, aged 68.

William Hutchinson Merrill, M.D. College of Physicians and Surgeons, New York City, 1887; formerly a practitioner of Jeckyl Island, Ga., and later of Pepperell, Mass.; died at his home in the latter city, December 2, aged 53.

Isaiah Carter Turner, M.D. Meharry Medical College, Nashville, Tenn., 1885; a well-known colored practitioner of Dayton, Ohio, and a member of the National Guard, who served throughout the floods in April of this year; died at the home of his father in Owensboro, Ky., December 1, aged 39.

William Ernest Miller, M.D. College of Physicians and Surgeons, Baltimore, 1892; a Fellow of the American Medical Association; a well-known practitioner of Northwestern Baltimore; died in the Franklin Square Hospital in that city, November 23, from cerebral hemorrhage, aged 43.

Adolphus Woodville Dail, M.D. Tennessee Medical College, Knoxville, 1891; a Fellow of the American Medical Association; for eleven years a practitioner of Cement, Okla.; died in the Washita Valley Hospital, Chickasha, Okla., November 20, from tubercular peritonitis, aged 44.

Charles Edward Wachenschwanz, M.D. University of Jena, 1850; formerly demonstrator of anatomy in Starling Medical College, Columbus, Ohio; a surgeon of volunteers during the Civil War; died at his home in Chillicothe, Ohio, November 7, from senile debility, aged 83.

Richard Cranch Greenleaf, M.D. Harvard Medical School, 1870; a trustee of the Lenox Library and Lenox Academy and town assessor for several years; a member of the Massachusetts Medical Society; died at Lawrence, L. I., December 3, from heart disease, aged 68.

Evan S. Weisiger, M.D. Pennsylvania University, Lexington, Ky., 1852; surgeon in the Confederate service during the Civil War; for fifteen years state quarantine officer at the mouth of the Brazos River, Tex.; died at his home in Brazoria, Tex., October 8, aged 83.

Thomas J. McClosky, M.D. St. Louis College of Physicians and Surgeons, 1889; a member of the Wisconsin State Medical Society; formerly a practitioner of Prairie du Chien and Beloit; died at the home of his sister in Dubuque, Iowa, November 28, aged 53.

Horace H. Tinker, M.D. New York Homeopathical Medical College, New York City, 1875; of New York City; died at his summer home in New London, Conn., November 20, from the effects of poison believed to have been self-administered with suicidal intent, aged 61.

Charles De Witt Rawson, Jr., M.D. Drake University, Des Moines, Ia., 1905; of Otley, Ia.; who was seriously injured in an automobile accident near Otley, November 13, died at his home in that city from the effects of his injuries, November 19, aged 31.

James Lawrence Turner, M.D. University of Georgetown, Washington, D. C., 1864; a veteran of the Civil War and for many years a practitioner of New York City; died at his home in Corona, Long Island, November 16, from pneumonia, aged 75.

Thomas Edwin Nott, Jr., M.D. Tulane University, New Orleans, 1885; formerly a practitioner of Spartanburg, S. C., but recently a resident of Brownsville, Tex.; died in that place, November 24, from tetanus due to a needle wound, aged 48.

Allen L. Woode, M.D. Hygeio-Therapeutic College of New York City, 1863; a resident of Flatbush, L. I.; for thirty-five years president of the Clinton Street Baths, Brooklyn; died in the Paul Kimball Hospital, Lakewood, N. J., October 25, aged 73.

Charles Young Moore, M.D. University of Toronto, Ont., 1871, and silver medallist of his year; for more than forty-five years a practitioner of Brampton, Ont., and medical officer of health of that place; died at his home, September 11, aged 66.

Anita E. Tyng, M.D. Woman's Medical College, Philadelphia, 1864; at one time a medical missionary in the Orient and formerly a member of the Rhode Island Medical Society; died at her home in Berkeley, Cal., October 16, aged 73.

H. G. Patterson (license, Kansas, 1901); a veteran of the Civil War; for thirty years a practitioner of northwestern Kansas; medical director of the Kansas State G. A. R. in 1907; died at his home in Rexford, November 29.

Dr. Charles Morton Clifford, M.D. Miami Medical College, Cincinnati, 1893; a Fellow of the American Medical Association; formerly a practitioner of Cynthiana, Ky.; died at his home in Le Roy, Ill., November 24, aged 46.

Alexander S. Cornell, M.D. Detroit College of Medicine, 1894; was instantly killed December 2, at his home in Copemish, Mich., by his own automobile, which he was cranking without having put the machine out of gear.

Woodson B. Fearing, M.D. University of Maryland, Baltimore, 1881; a member of the Medical Society of the State of North Carolina; of Manteo; died in the Sarah Leigh Hospital, Norfolk, Va., December 2, aged 54.

Robert Lyon Sanderson, M.D. Cleveland University of Medicine and Surgery, 1857; for many years medical officer of health for the township of Yarmouth, Ont.; died at his home in Sparta, Ont., September 23, aged 81.

John Gould, M.D. University of Michigan, Ann Arbor, 1890; for four years assistant superintendent of the Yankton (S. Dak.) State Hospital for the Insane; died at his home in Denver, Col., November 24, aged 55.

W. L. Simmons, M.D. Graffenburg Institute, Dadeville, Ala., 1858; for more than forty years a practitioner of Weatherford, Tex.; died in a sanatorium at Fort Worth, November 19, from senile debility, aged 81.

John J. Baker, M.D. Physio-Medical College of Indiana, Indianapolis, 1875; formerly of Westfield, Ind., and Indianapolis; died at the home of his daughter in Peru, Ind., October 20, aged 62.

Meredith Taylor (license, Missouri, 1883); formerly circuit court judge of Jasper County; died at the Odd Fellows' Home, Liberty, Mo., September 24, from cerebral hemorrhage, aged 63.

George Washington Wise, M.D. Medical College of Georgia, Augusta, 1861; for many years a practitioner of Trenton, S. C.; died in the Columbia, S. C. City Hospital, November 4, aged 74.

Ellsworth Henry Way, M.D. Cleveland University of Medicine and Surgery, 1874; founder of the Riverside (Cal.) Hospital; died at his home in Riverside, October 21, aged 52.

Salmon Stebbens Douglas, M.D. Chicago Homeopathic College, 1892; coroner of Delaware County, Iowa; died at his home in Earlville, November 28, of pneumonia, aged 45.

Thomas Henry Ullyot, M.D. University of Southern California, Los Angeles, 1908; died at his home in Pomona, Cal., November 7, from ptomain poisoning, aged 32.

William M. Edwards, M.D. University of Alabama, Mobile, 1880; died at his home in St. Elmo, Mobile County, November 26, from cerebral hemorrhage, aged 59.

Alfred Layman, M.D. Hahnemann Medical College, Philadelphia, 1882; died at his home in Philadelphia, December 6, from carcinoma of the stomach, aged 70.

Fleming B. Todd (license, Missouri, 1883); for more than forty years a practitioner of North Central Missouri; died at his home in Madison, September 18.

James H. Willis (license, fifty years' practice, Kentucky, 1895); a veteran of the Mexican War; died at his home in Lawrenceburg, November 10, aged 90.

Henry C. Williams (license, Michigan, 1900); for more than fifty years a practitioner of Morenci, Mich.; died at his home in that village, November 3, aged 79.

Leandre Coyteaux Prevost, M.D. Ecole de Médécine et de Chirurgie, Montreal, 1874; of Ottawa, Ont.; died at Saranac Lake, N. Y., November 6, aged 63.

Joseph G. Williamson, M.D. Bennett Medical College, Chicago, 1882; formerly of LaGrange, Ill.; died at his home in Montague, Mich., November 5.

Richard David Hailey, M.D. University of Louisville, Ky., 1909; died at his home in Olive Hill, Tenn., August 6, from pernicious malarial fever, aged 38.

John Oscar Stevens (license, Texas, 1898); of Hobbs; was shot and instantly killed while driving through Camp Springs, Tex., November 13, aged 46.

Clarence E. Frey, M.D. Hospital College of Medicine, Louisville, 1906; died at his home in Louisville, November 30, from pneumonia, aged 32.

Robert Charles Meyers, M.D. University of California, San Francisco, 1880; formerly of San Francisco; died in Los Altos, Cal., November 23.

Julius L. Schauer, M.D. College of Physicians and Surgeons, Baltimore, 1891; formerly of Milwaukee; died in Chula Vista, Cal., August 26, aged 48.

Gerald Waddell, M.D. McGill University, Montreal, 1907; of Montreal; died in Chatham, Ont., July 13, from carcinoma of the stomach, aged 29.

Calvin Lutz, M.D. Victoria College, Coburg, Ont., 1868; died at his home in Gananoque, Ont., September 14, aged 62.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE MEDICAL FRAUD ON THE PUBLIC AND ON THE PROFESSION

THE JIREH DIABETIC FOOD COMPANY

The Company Rises to Explain in a Brief Note of One Thousand Words

Exploiters of fraudulent and dangerous pharmaceutical products have no love for THE JOURNAL. When such products are exposed in these pages, their manufacturers seldom reply to the criticisms except through indirect channels. Then the replies are frequently replete with billingsgate and denunciation of THE JOURNAL and its editor, the Association and the medical profession generally.

We have, at different times, had to call the attention of the public and the medical profession to the fraudulence and dangers of some of the products of the Jireh Diabetic Food Company. We have shown that the Jireh company lied boldly and directly so long as it could do so without getting into the courts, and that it lies inferentially still; we have shown that Jireh flour had practically as much carbohydrate as ordinary flour; we have shown that, probably to escape prosecution under the Food and Drugs Act, the Jireh concern has coined the word "diatetic" and substituted it for the word "diabetic," which used to appear in its advertisements; we have shown that the claim made for the Jireh products that they are "starch-changed" was a false one, and that the company has modified this to "starch-treated," presumably to avoid being haled into the courts under the "pure food law"; we have shown, in short, the unreliability both of the Jireh concern and of its products.

Two or three weeks ago a New York physician wrote to THE JOURNAL for information regarding the Jireh products. We sent him such matter as had been published on the subject, and he showed this material to a patient who was using the Jireh products. The patient, in turn, expressed her opinion of the product to the retailer from whom she had been purchasing it. A day or two later she received a letter from the Jireh Diabetic Food Company, which, in spite of its length and discursiveness, we publish in full, so that physicians may know just what this company thinks of them. The letter, which is dated Nov. 20, 1913, really belongs in the "Knocks and Boosts" department, but its length prevents its use there. Here it is:

"We learned through Mess. Cushman Co. that you are a constant user of Jireh Foods for some time past, and that recently a certain derogatory statement was brought to your attention relative to our product. We feel an explanation is due you for two reasons.

"First, because we want you to continue using Jireh Foods and thus receive the benefits of the same; and second, that the remarks called to your attention are not only libelous, but are in no way pertinent enough to detract from the value of our product. In the first place, we want to state that the particular journal in question has been endeavoring to injure our business for some time past and that we are not the only descent [*sic*] manufacturers of foods that are suffering in this way at the hands of the editors of this particular magazine. Since you are interested in the Jireh Foods, you may be more interested to learn why this particular magazine is so anxious to injure our reputation. The reason is very obvious if you will take into account the fact that this magazine is the official journal of the medical association of this country which is known as the backer of the medical trust. It is very clear to you, no doubt, that there are some physicians, particularly those that are associated with the magazine, who are anxious to stamp out of existance [*sic*] such concerns that offer a bona fide product, a meritorious product which actually produces the required results without the aid of medicine.

"For the particular maladies for which we offer our foods, we have been very successful, consequently the antagonism on the part of this particular journal is the logical thing. In addition to this, however, and perhaps more important to us, is the fact that the editors of this magazine have made it known to us that they will not approve of our product until such time that

we care to be dominated by the moving influence of the magazine in question. They want us to supply them with the private formula which we use for manufacturing our foods and to enlighten them and show them the various processes applied to our products to produce the required results. As a bona fide and ethical business house, we absolutely and unqualifiedly refuse to comply with this wish, and will always refuse to do so, no matter how often they may attack us. We stand strictly upon principle in this matter and propose to run our business in our own way, and will not, under any circumstances, allow a magazine or anybody else dictate to us under what conditions we are allowed to do our business.

"The remarks which they make would perhaps hurt us some if they emanated from a source that was qualified to judge the merits of our food. The absurd side of the issue, and perhaps the comical side of it, is the fact that the honorable gentlemen who assume to condemn a product, know less about the disease for which the product is offered, and much less about diet and foods than the average layman. Consequently, we consider it simply absurd to allow them to step into our business and dictate policy to us. This is the gist [*sic*] of the discontent that prevails between the magazine editors and ourselves, and as long as we refuse to comply with their wish, we certainly cannot expect them to speak well of us. It has become a notorious fact in the medical profession that their criticisms are almost valueless, inasmuch as they stop at nothing in order to create sensationalism, and have attacked not only ourselves, but every bona fide manufacturer of foods and drugs in this country who has refused to fall in line with them.

"This explanation, we trust, will appeal to your good judgment and will convince you of what is said about us is untrue. Furthermore, our business has grown to colossal proportions, notwithstanding their endeavors to crush us. We call your attention to a most peculiar fact: that is, that they make no comment whatsoever as to the product and its therapeutic value in the treatment of diabetes. You notice they make an awful play on our literature, which was changed merely to suit conditions in business. We also wish to call your attention to another peculiar fact, and that is that a great majority of the physicians who are in with this magazine readily recommended our foods, and we also believe that your physician, after reading this letter, will feel the same way as most physicians do in relation to our foods. We believe that your physician is perfectly willing to be convinced that our foods are as represented to be, and the very best clinical evidence as this is the effect our foods have had upon you. Finally, if the foods are palatable and wholesome and have alleviated the annoying symptoms of Diabetes, then why should you be guided by the opinions of demagogues and yellow journalists?

"You may be pleased to learn that our foods have received the attention of Dr. Wiley, the well-known chemist and food scientist of this country, and we have now in our possession his reports showing the very high standard of our foods. This, in our opinion, is of more consequence than all the harangue which those venerable gentlemen of the magazine may indulge in.

"We want to convince you without an atom of doubt that we are honest and bona fide in everything we say, and we extend to you a hearty invitation to call at the first opportunity and shall be glad to tell you anything you may wish to know. Thus awaiting the pleasure of this visit, we beg to remain

"Yours very truly, JIREH DIABETIC FOOD CO."

We learn from this letter that THE JOURNAL'S "remarks" on the Jireh product are "libelous." We have made them many times and for several years past; if libelous, the manufacturer has excellent grounds for damages. We learn, too, that our remarks "are in no way pertinent enough to detract from the value" of the Jireh products. Why, then, take any notice of them? We learn, moreover, for the hundred-and-first time, that THE JOURNAL is the official organ of the "medical trust," and we are told that "there are some physicians" that are opposed to the Jireh Foods because these products cure diabetes without the use of medicine! THE JOURNAL, so the company says, wants the Jireh Diabetic Food Company to supply its "private formula" and to show the "various processes" by which the Jireh products are made. Such statements indicate that the Jireh Diabetic Food Company does not confine its mendacity to the mere advertising of its product, where the necessity for lying is naturally great.

The ambiguous remarks regarding Dr. Wiley are evidently intended to convey the idea that the doctor approves of the Jireh products. Dr. Wiley was sent a copy of the Jireh letter and his attention directed to the statements appearing therein regarding himself. He replied:

"In regard to the Jireh products and their claims that our reports show the very high standing of their foods, I would say that I consider such a claim entirely false. . . . We did examine five or six products in our own laboratory, however, and found them to be of very fair composition per se, but *not of a composition that afforded any legitimate basis for their claims. We entirely disapproved . . . three of the products making special claim as to their fitness for diabetics.* [Italics ours.—ED.] These were the Wheat Nuts, the Jireh Flour and the Patent Barley. Two of the other products were passed with a non-committal rating, which means that they are not actually disapproved, but the star marking is not accorded. These products were the dietetic Rusks and the Macaroni. For the latter especially no specific claims seem to be made. We called attention, however, to the generally objectionable juggling of terms indulged in by this company. . . ."

The Jireh concern says that in spite of the efforts of THE JOURNAL to "crush" it, "our business has grown to colossal proportions." Of this the New York physician who sends us the letter says: "Their 'colossal proportions' must have received a slight jar or they would not have taken time to write such a letter."

The following medical journals carry the advertisements of the dangerous and fraudulent Jireh products:

Dietetic and Hygienic Gazette *Pediatrics*
Medical Times *Medical Herald*

DOWD'S PHOSPHATOMETER

Dowd's Phosphatometer, according to its inventor, is a device "for taking the phosphatic index or pulse of the nervous system." Its originator, J. Henry Dowd, M.D., Buffalo, N. Y., writes enthusiastically of his instrument:

"Physicians who use the Phosphatometer are sending 50 per cent. less patients away for consultation, getting 75 per cent. better results at home, because the Phosphatometer tells the cause and what to do, and the Comp. Phosphorus Tonic gives results in 80 per cent. of all conditions of illness."

The "Comp. Phosphorus Tonic" referred to in the above quotation is a sideline of Dr. Dowd's, put out by the Richardson Company of Buffalo. The stationery of the Richardson Company gives its address as 334 Franklin Street, but directs that all communications be addressed to 40 North Pearl Street, which is the private address of J. Henry Dowd. According to the Buffalo directories, 334 Franklin Street is the drug store of Arthur E. Reimann.

To those who read the Dowd "literature," the Phosphatometer will appear to be either one of the wonders of the age or an unscientific absurdity. To the thinking man it will be the latter. It pretends to determine the amount of phosphates in the system. This is accomplished—alleged—by taking the second urine passed in the morning and mixing a portion of it in the instrument with a solution which is the well-known magnesia mixture. The height to which the crystals settle in ten minutes determines, according to Dowd, the amount of phosphates! Was ever a test devised that violated more of the first principles of quantitative chemical analysis? If so, we never heard of it. Dowd's system does not require any determination of the amount of urine passed in twenty-four hours or even of the amount passed at the second micturition in the morning.

If a patient whose urine was being "tested" by the Dowd method, should drink two cups of coffee for breakfast instead of one, his urine might be so dilute that the phosphates would fall below the "normal" mark. Dowd says that his Phosphatometer "takes the pulse of the nervous system." What about the patient who eats several eggs or consumes a sweetbread or other nuclein-containing articles of diet? The increased amount of phosphates in such a diet might easily lead to an apparent excess in the urine. Every physician, nay, every sophomore medical student, knows that the amount and kind of food ingested governs almost entirely the amount of phosphates excreted in the urine.

What actually does "Dowd's Phosphatometer," when used according to instructions, show? It shows the *presence* of phosphates in the urine; it permits a guess—with not the slightest claim to accuracy—as to the amount in the specimen tested; it gives no possible clue to the normal or abnormal relation of the phosphates in the urine or as to whether the source of the crystals precipitated is the nerve tissue or the food. Yet here are some of the claims made for it:

"The Phosphatometer shows nervous metabolism the same as the ureometer shows muscular; the former errs in about 3 per cent.; the latter in 40 per cent."

"The Phosphatometer shows the amount of nerve food being used and present in the nerve cells."

"Over 50 per cent. of pain and human suffering is due to the nerves crying for food; the Phosphatometer will show the true cause in ten minutes."

"The Index not only tells the present condition, but foretells the future, thus preventing serious complications which might arise."

"The Phosphatometer measures the amount of phosphorus in the system."

"The Dowd Phosphatometer not only takes blood-pressure, it tells how to regulate it."

"The Phosphatometer measures the amount of phosphorus in the nerve cells; it is as positive in nerve troubles as the x-ray in fractures."

These claims are essentially false. As a matter of fact, a simple examination of the urine for phosphates cannot tell us the condition of the nervous system. This must be evident from the fact that only a portion of the phosphates is excreted in the urine, a very considerable part passing out with the feces. Further, the bulk of the phosphorus excreted comes from the food and only a small portion from the waste of the nervous system. The amount excreted by the urine which comes from torn-down nerve tissue is so small that it is practically impossible to estimate variations in it even by the most careful analytic methods.

In brief, Dowd's "scientific method" is nothing more than unscientific humbug.

PULMONOL

Some Facts from the Inside

The letter that follows was received a few days ago:

"*To the Editor.*—I congratulate you on the article which appears in THE JOURNAL, Nov. 29, 1913, on Pulmonol.

"I have been fiscal agent for several companies, and some three years ago I was persuaded to take up the floating of Pulmonol. I did this after investigating and coming to the conclusion that the medicine was all that was claimed for it. I had not been in the business very long, however, before I found out that I had been deceived.

"The first case you mention, which was supposed to be so wonderful that the Committee on Tuberculosis was asked to investigate, was my first eye opener. Some time after this woman's death her daughter came to the office insisting and then *pleading* that the testimonial be discontinued, but Dr. Payne absolutely refused. Feeling how manifestly unfair it was to give the name of a dead person as a testimonial for the medicine was one of the reasons for my quarrel with the "medical director" and for my getting out of the concern.

"Some months after I left him, he continued to use this testimonial, advertising it considerably in and around New York. I drew the attention of the editor, whom I knew, of one of the newspapers in which the ad. was appearing, and he immediately discontinued it. Riker & Company, under whose name the advertisement appeared, also insisted that Dr. Payne omit this testimonial from his circulars in future.

"Pulmonol is being pushed very much in and around New York, and I think your article ought to be reprinted and spread broadcast and so help those poor people who have been deluded into believing that it really aids them in fighting the disease.

"I do not know whether or not your Journal is published for medical men alone. If not, I wish you would send me three copies, for which I will forward you forty-five cents on hearing from you. I would like to bring the article before Riker & Company, for I know this to be a reputable concern and I do not think they would longer stand behind and push a medicine like this after reading an article so convincing as yours of its fraudulent character.

"RANSON CAYGILL, 82-90 Beayer St., New York City."

The information contained in this letter is interesting and instructive, but that is not the reason we are publishing it. We are bringing it to the attention of our readers because it is typical of letters that come almost daily to this office from laymen who are interested in the work THE JOURNAL is doing in exposing medical frauds on the public. This phase of the propaganda work is encouraging and fruitful of good results. It is in the "ethical proprietary" field that come the greatest discouragements. The "proprietaries" sold to physicians, which THE JOURNAL is exposing, are in every case a disgrace to scientific medicine and in many cases, at least, just as fraudulent as the various "patent medicines." Yet physicians do not exhibit anything like the enthusiasm over exposures of this sort of thing that they and the public show in the case of "patent medicines." This attitude is an unworthy one. Sooner or later the knowledge that the public is gaining regarding "patent medicine" frauds will cause it to focus its attention on the proprietary evil as it affects the medical profession. When that time comes will it be shown that the physicians of the country have cleaned house? If not, the profession will suffer a loss of confidence on the part of the more intelligent portion of the public that will not easily be regained.

Correspondence

Method of Sterilizing Rubber Gloves

To the Editor:—The method of sterilizing rubber gloves by two tablets (weight not given) of mercuric cyanid in 4 ounces of alcohol and 4 ounces of talc (time not given) is acknowledged by Dr. Ray Ernest Smith (THE JOURNAL, Nov. 15, 1913, p. 1831) to be "theoretically" inefficient; but he says that the gloves "practically surely seem" to be sterile. There are no degrees of sterility of gloves; gloves are either sterile or not sterile and all gloves must be considered contaminated until they are sterile.

Mercuric cyanid is useless as a germicide, as may be seen by any one sufficiently interested to read Harrington's article (*Boston Med. and Surg. Jour.*, Jan. 14, 1904). He tested the cyanid in all strengths and mixtures and found that in a 1:500 solution it had no effect on the staphylococcus after thirty minutes. He concluded that in the strength recommended, 1:1,000, it did not destroy known pus organisms in three hours and that it was an inefficient germicide.

Dr. Smith asserts that hot water and soap followed by alcohol and cyanid are sufficient to sterilize gloves for obstetric work. He states that "some of our famous surgeons" use washing, followed by alcohol, to sterilize their hands. Schumberg (*Arch. f. klin. Chir.*, 1906, lxxix, 1) found that in most cases the hands showed more bacteria than before scrubbing, which he ascribed to the bringing of bacteria to the surface from the gland crypts, and that subsequent bichlorid scrubbing did no good. He found a fat solvent of benefit. Aperlo (*Clin. Chir.*, 1913, xxi, 331) concluded that continued washing with warm water and soap, using a sterile brush, was not sufficient to remove germs from the hands, and that the result was no better if the washing was continued for an hour. How, then, does Dr. Smith expect to rinse his gloves clean with hot water?

Alcohol is a poor germicide. Koch grew spores after 110 hours in alcohol. Goenner grew the streptococcus after fifteen minutes in alcohol, and Senger the *Staphylococcus aureus* after twenty minutes. An evidence of its weak action is the large percentage of alcohol required to preserve various proprietary liquid foods, in which it is used only as an antiseptic and not as a germicide. I have frequently recovered organisms from the previously infected hand after five minutes' immersion in alcohol, and Schumberg states that the reduction of the bacteria is only quantitative and not absolute.

All skin germicides should be fat solvents in order to penetrate the sweat-glands and hair-follicles. Organisms may reside within these and the entrance be blocked with fat, or they may exist within the fat itself. Alcohol is not a

good fat solvent; it dissolves the fatty acid, but not the glycerid in which form the fat in the skin always exists. This is one reason why alcohol is not a good skin germicide. The concentration of alcohol is of no importance; it is too weak germicidally to matter whether it is 70 or 95 per cent.

I would repeat my advice that gloves should be boiled in water (fifteen minutes is sufficient) or glycerin or put in the steam sterilizer for thirty minutes at 120 C. (248 F.) with 15 pounds' pressure. The mercuric salts and alcohol are useless for the disinfection of rubber gloves.

ELLICE MCDONALD, M.D., New York.

The Truth About Ozone

To the Editor:—Hardly a month passes without some request coming to this laboratory concerning ozonizers and the uses of ozone for ventilating purposes. It was therefore encouraging to read the recent article of Drs. Jordan and Carlson (THE JOURNAL, Sept. 27, 1913, p. 1007) on the properties of ozone, as well as that of Sawyer, Beckwith and Skolfield (*ibid.*, p. 1013), concerning tests on ozone machines. These give the most definite data yet published on the subject. During the past year I have had several opportunities to see installations of these machines in a number of places. Invariably the odor of ozone could be detected only close to the machine. As the odor in very small quantities can be so readily noticed, this means that the gas was not being distributed far from its source. In some places good results were claimed for the machine. It has been my opinion that these results can be fully accounted for by the increased circulation of air in the room caused by the fan in the machine, as you have suggested in a recent editorial (THE JOURNAL, Sept. 27, 1913, p. 1045).

One instance of definite results may be of interest. An ozonizer was installed in a room in which it was necessary to exclude even small quantities of dust and dirt on account of the purpose to which the room was put. It was hoped that the ozone would relieve the usual stuffy condition. The irritating effects of the ozone were so great that the workmen refused to stay in the room unless the machine was removed.

It seems as if the positive results obtained by Jordan and Carlson and Sawyer were such that further data are unnecessary, and that we can finally give up the fallacy that ozone is of use in air purification.

JOHN F. NORTON, Laboratory of Sanitary Chemistry, Massachusetts Institute of Technology, Boston.

Stethophone, Not Stethoscope

To the Editor:—Hippocrates employed immediate auscultation. Laënnec conceived the idea that mediate auscultation is practicable, and first used a roll of paper between his ear and the patient's chest. Later he constructed the monaural stethoscope, which is still the favorite instrument of many clinicians in Europe.

From the days of Laënnec (1816) up to the present, for the last ninety-seven years, the instrument has been called the stethoscope. The word is of Greek origin. It is compounded of *στῆθος*, breast, chest, and *σκοπέω* inspect, see. The word "stethophone" would be compounded of stethos and the suffix phone, which means sound or voice.

In the days preceding the ophthalmoscope, the auriscope, cystoscope, gastroscope, bronchoscope or the phoneidoscope, and in the days preceding the telephone, graphophone, dictaphone and microphone, the word stethoscope need not perhaps have been criticized; but in the present day I believe it is just as well that our classification be correct. It is clear then, that the name of instruments by the use of which we see, when the proper terminology is used, end in the suffix "scope," while the name of instruments by the use of which we hear, should end in the suffix "phone." In this connection, the phoneidoscope, an instrument to make visible the effect of sound, bears a very instructive name. We may find ourselves reluctant to give up an error which can soon celebrate its centennial, but if a stethophone it is, "why then miscall it?"

JOSEPH H. BARACH, M.D., Pittsburgh, Pa.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

DRESSING FOR LABORATORY TABLES

To the Editor:—Please publish the formula for the dressing for laboratory tables which makes them acid- and stain-proof. This formula appeared in THE JOURNAL some time ago but I am unable to locate it.

WILLIAM H. DEADERICK, M.D., Hot Springs, Ark.

ANSWER.—The formula for the ebonizing preparation said to render laboratory tables resistant to staining or corroding chemical reagents calls for two solutions as follows:

Solution A:	
Copper sulphate and potassium chlorate, each	125 gm.
Water	1,000 gm.
Boil till salts are dissolved.	
Solution B:	
Anilin hydrochlorid	150 gm.
Water	1,000 gm.
or:	
Anilin	120 gm.
Hydrochloric acid	180 gm.
Water	1,000 gm.

Two coats of Solution A are applied while hot, the second as soon as the first has dried. Two coats of Solution B are applied and the wood allowed to dry thoroughly. Next a coat of raw linseed oil is rubbed in by means of a cloth to give a polish. In the treatment with the oil, the deep black color is partially brought out, but this does not uniformly appear until the table has been thoroughly washed with hot soapsuds. This latter treatment removes superfluous chemicals. To keep the table in condition it is said to be necessary only to wash off occasionally with soap and water and then to rub with oil. The cost of both solutions will not be over 50 cents. The amount is sufficient for ten square yards of surface.

KOWARSKY BLOOD-TEST FOR DIABETES

In THE JOURNAL, Nov. 22, 1913, p. 1921, we published through error the Kowarsky test for sugar in the urine instead of the test for differential diagnosis of diabetes. The method of Kowarsky is a modification of that of Bertrand, the principle of which is the reduction of a copper solution by the sugar-containing liquid and solution of the cuprous oxid in an acid solution of ferrous sulphate which causes the separation of an equivalent amount of ferrous oxid, the quantity of which is determined by titration with potassium permanganate.

The technic is substantially as follows: Two flask-shaped tubes graduated with two marks indicating 0.5 and 1 c.c. contents are filled to the lower mark by means of a capillary pipet with a 2 per cent. sodium fluorid solution. Blood carefully drawn from the finger-tip is added to the upper mark, foam being removed by a drop of ether. The mixture is removed to a centrifuge tube with two marks, and the rinsings of the tube added up to the lower mark (5 c.c.). A little powdered sodium tartrate is dissolved in the liquid, 4 c.c. of a dilution of liquor ferri dialysati (1:1) are added, the tube corked, shaken and let stand for five minutes. It is then filled to the mark with liquor ferri dialysati, well shaken and centrifuged for from five to ten minutes. 2 c.c. of a solution containing copper sulphate, 0.8; pure glucose, 0.1, and water, 200, is mixed with 2 c.c. of one containing sodium tartrate, 40; sodium hydroxid, 30, and water, 200, in a small Erlenmeyer flask (of from 30 to 40 c.c. capacity) and exactly 5 c.c. of the clear liquid in the centrifuge added. The mixture is heated to boiling, boiled gently for three minutes and cooled by letting the flask stand in water five minutes. The mixture is filtered through a carefully tested asbestos filter by means of a filter pump. The residue is thoroughly washed, care being taken that the cuprous oxid remains on the superficial layer of the filter. The filter pump is detached, the cork bearing the filter is placed in the Erlenmeyer flask, and the cuprous oxid dissolved through the filter in 3 c.c. of the following solution: ferrous sulphate, 10; sulphuric acid, 40, and water, 200. The filter is washed until filtrate and washings equal not more than 10 or 12 c.c., which are then titrated with a 1:2,000 potassium permanganate solution until a distinct rose color remains.

The results are calculated in the following way: The number of cubic centimeters of permanganate solution used in

the titration multiplied by 0.91 gives the amount of copper. The amount of sugar corresponding to the amount of copper is given in the accompanying table:

Sugar	Copper	Sugar	Copper
1.0	1.95	2.3	4.45
1.1	2.15	2.4	4.65
1.2	2.35	2.5	4.80
1.3	2.55	2.6	5.00
1.4	2.75	2.7	5.20
1.5	2.90	2.8	5.40
1.6	3.10	2.9	5.60
1.7	3.30	3.0	5.75
1.8	3.50	3.1	5.95
1.9	3.70	3.2	6.15
2.0	3.85	3.3	6.35
2.1	4.05	3.4	6.55
2.2	4.25	3.5	6.70

From this amount 1 mg. must be subtracted as being the amount already present in the solution used. The amount obtained by this subtraction corresponds to the amount present in 0.25 c.c. of blood, as only half of the amount of blood taken was used in the titration.

The whole process can be carried out in not more than thirty or forty minutes. Like every other quantitative method, it requires a certain amount of practice. Beginners should first learn to determine the amount of sugar in the solution used. (See *Deutsch. med. Wchnschr.*, Aug. 21, 1913, p. 1635.)

COMPLEMENT-FIXATION TEST FOR GONORRHEA

To the Editor:—1. Is the complement-fixation test for gonorrhea supposed to disappear as a case of gonorrhea, or a complication, progresses toward recovery?

2. Kindly give me a few references covering this point.

O. J. MINK, M.D., Bremerton, Wash.

ANSWER.—1. According to the gonorrhea complement-fixation test, the antibodies can be present for at least two years after infection, but we find no record of a single positive reaction occurring after two years.

2. The following are references for the past two years:

Rockwood, H. L.: Complement-Fixation Test in Gonorrhea, *Cleveland Med. Jour.*, January, 1913; abstr., THE JOURNAL, March 1, 1913, p. 697.

Owen, R. C., and Snure, H.: Complement-Fixation Test in Diagnosis of Gonorrhea, *Jour. Michigan State Med. Soc.*, May, 1913; abstr., THE JOURNAL, May 24, 1913, p. 1666.

Value of the Complement-Fixation Test in Gonorrhea, THE JOURNAL, Queries and Minor Notes, March 23, 1912, p. 881.

Gonorrheal Complement-Fixation Reaction, THE JOURNAL, Society Proceedings, April 27, 1912, p. 1307.

McNeill, A.: Complement-Fixation Test for Gonorrhea, *Arch. Pediat.*, September, 1913.

Lespinasse, V. D., and Wolff, M.: Clinical Value of Gonorrhea Complement-Fixation Test, *Illinois Med. Jour.*, January, 1913.

O'Neil, R. F.: Results of Complement-Fixation Test for Gonorrhea at Massachusetts General Hospital, *Boston Med. and Surg. Jour.*, Oct. 3, 1912.

URIC ACID TESTS—VALUE OF SODIUM CACODYLATE—PALATABLE ADMINISTRATION OF OLEORESINA ASPIDII—STRENGTH OF PHENOCO—VARIOUS PROPRIETARIES

To the Editor:—1. Is there any test other than a complicated quantitative analysis by which a physician can determine whether or not there is an excessive amount of uric acid in the urine?

2. Has Deschien's Syrup of Hemoglobin been accepted for the N. N. R.? Is it an ethical proprietary or a secret formula fraud?

3. What value has sodium cacodylate hypodermically? Is it of any value as a "tonic"—as a hematinic?

4. What is your opinion of Electrargol, Electraurol, Electroplatinol?

5. How can oleoresina aspidii be administered palatably to a child unable to swallow capsules?

6. I have been in the habit of storing tubes of catgut, glass catheters and rubber gloves, also of cooling instruments in phenol 5 per cent., or bichlorid 1:1,000. What strength of "phenoco" should be used for equal effect, or will it not take the place of the others?

M. D. L.

ANSWER.—1. The amount of uric acid can be determined in a convenient way, sufficiently accurate for most clinical purposes, by means of Ruhemann's method with an instrument known as the "uricometer," or by the "purinometer" introduced by Hall. These methods may sometimes be serviceable in practice. The technic is described in recent works on laboratory diagnosis. Usually it will be necessary to know the amount of purin nitrogen that is being ingested, or to place the patient on a purin-free diet before making the estimation.

2. We have no information regarding Deschien's Syrup of Hemoglobin. It is a proprietary product.

3. Sodium cacodylate has the effects of preparations of arsenic in general, and might be used in the same way as other arsenic compounds as a tonic and hematinic. (See N. N. R., 1913, p. 239.)

4. Electrargol, Electraurol and Electroplatinol are preparations of colloidal metals. The claims made for them appear to be very optimistic.

5. Oleoresina aspidii may be given in an emulsion made up with simple elixir and acacia in which from 5 to 10 minims are contained in 1 dram.

6. Phenoco is said to be about fifteen times as strong as pure phenol. Hence, if you use phenol in a 5 per cent. solution, a solution of phenoco 1:300 should give an equal effect.

COMPOSITION AND USE OF GIEMSA STAIN

To the Editor:—Please give directions for making up the Giemsa stain, and its use.

E. S. HALL, M.D., McLeansboro, Ill.

ANSWER.—The formula of the Giemsa stain is as follows:

Azur II—eosin	3.0 gm.
Azur II	0.8 gm.
Glycerin (C. P.)	250.0 c.c.
Methyl alcohol (C. P.)	250.0 c.c.

Grind up the dyes in the alcohol and then add the glycerin.

Fix the films in methyl alcohol, and stain for five minutes in a mixture of 14 drops of the stain to 10 c.c. of distilled water. If necessary, a trace of sodium carbonate may be added to the water to intensify the basic stains. Wash in water, dry, and mount.

GREEN PLANTS IN THE SICK-ROOM AT NIGHT

To the Editor:—1. Is it advisable to remove living green plants from the sick-room at night?

2. If so, why only at night?

R. M. C.

ANSWER.—1. As a rule, living plants will do no harm in a sick-room even at night. In some cases, however, they give off ethers which may have an unfavorable influence on sensitive persons. It is usually stated that they give off carbon dioxid at night, but the amount of carbon dioxid thus added to the air of a room is not likely to be a serious detriment.

2. No harm can be attributed to the ordinary, or daylight, metabolism of plants, which consists in decomposing carbon dioxid and giving off oxygen.

TREATMENT FOR URTICARIA AND PRURITUS IN HYPERTHYROIDISM

To the Editor:—Please suggest treatment for urticaria and the attendant pruritus in a case of hyperthyroidism.

H. P. ASHE, M.D., Pittsburgh, Pa.

ANSWER.—Attention should be given chiefly to the underlying condition of the thyroid. The digestive organs should be kept in as good order as possible. Rest and quiet should be insisted on. Nervous sedatives might be tried. Calcium chlorid is recommended as a remedy in urticaria and would be worthy of a trial. Local alkaline baths or washes and the various antipruritic agents, such as 1 to 2 per cent. solutions or ointments of phenol (carbolic acid) or menthol, are appropriate.

DISINFECTION BY FORMALDEHYD AND BY SULPHUR

To the Editor:—1. What is the best and most efficient method for disinfecting infected rooms for tuberculosis, typhoid and other contagious diseases?

2. Is burned sulphur a good disinfectant in a closed room?

S. P. HAND, M.D., Demopolis, Ala.

ANSWER.—1. Disinfection with vapors of formaldehyd is regarded as a most efficient method of disinfection at present.

2. Burning sulphur in a closed room in the proportion of 3 pounds of sulphur per thousand cubic feet is a fairly efficient method of disinfection, provided that the surfaces and material to be disinfected are thoroughly wet.

TRAINING SCHOOL FOR MALE NURSES

To the Editor:—Please give the address of a training-school for male nurses. I have been a nurse for a number of years and wish a chance to perfect myself in my chosen work.

ARTHUR WILSON, Redland, Fla.

ANSWER.—So far as we can ascertain there is no school for general nursing in the United States to which men are admitted.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

ALABAMA: Montgomery, Jan. 13. Chairman, Dr. W. H. Sanders, Montgomery.

ARIZONA: Phoenix, January 3. Sec., Dr. John Wix Thomas, 200 National Bank of Arizona Bldg., Phoenix.

COLORADO: State Capitol, Denver, January 6. Sec., Dr. David A. Strickler, 612 Empire Bldg., Denver.

ILLINOIS: The Coliseum Annex, Wabash Ave. and 16th St., Chicago, Jan. 14-16. Acting Sec., Amos Sawyer, Springfield.

INDIANA: Room 56 State House, Indianapolis, Jan. 13-15. Sec., Dr. Wm. T. Gott, 56 State House, Indianapolis.

IOWA: The Capitol Bldg., Des Moines, January 6-8. Sec., Dr. Guilford H. Sumner, Capitol Bldg., Des Moines.

MINNESOTA: State University, Minneapolis, January 6-9. Sec., Dr. Thos. S. McDavitt, 814 Lowry Bldg., St. Paul.

NEW HAMPSHIRE: State House, Concord, January 6-7. Regent, Mr. H. C. Morrison, State House, Concord.

NEW MEXICO: Santa Fe, Jan. 12. Sec., Dr. W. E. Kaser, East Las Vegas.

NORTH DAKOTA: Grand Forks, January 6. Sec., Dr. G. M. Williamson, Grand Forks.

OKLAHOMA: Oklahoma City, Jan. 13. Sec., Dr. John W. Duke, Guthrie, Okla.

OREGON: Portland, January 6-8. Sec., Dr. L. H. Hamilton, Medical Bldg., Portland.

SOUTH DAKOTA: Capitol Bldg., Pierre, Jan. 13. Sec., Dr. Park B. Jenkins, Waubay.

VERMONT: Montpelier, Jan. 13-15. Sec., Dr. W. Scott Nay, Underhill.

WASHINGTON: Spokane, January 6-12. Sec., Dr. F. P. Witter, Traders' Block, Spokane.

WISCONSIN: Madison, Jan. 13. Sec., Dr. John M. Beffel, 3200 Clybourn St., Milwaukee.

Illinois September Report

Mr. Amos Sawyer, acting secretary of the Illinois State Board of Health, reports the written examination held at Chicago, September 24-26, 1913. The number of subjects examined in was 16; total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 136, of whom 87 passed and 45 failed. Three candidates did not complete the examination and one withdrew. The following colleges were represented:

College	Year Grad.	Total No. Examined
PASSED		
Georgetown University School of Medicine	(1913)	1
Bennett Medical College	(1912,3) (1913,8)	11
Chicago College of Medicine and Surg.	(1911) (1913.25)	26
Hahnemann Med. Coll. and Hosp., Chic.	(1912) (1913,2)	3
Hering Medical College	(1913)	1
Jenner Medical College	(1911) (1913,2)	3
Northwestern University	(1903) (1910) (1913,3)	5
Rush Medical College	(1902) (1912) (1913,8)	10
University of Illinois	(1912.2) (1913,13)	15
College of Physicians and Surgeons, Keokuk	(1877)	1
Drake University College of Medicine	(1913)	1
Tufts College Medical School	(1912)	1
American Medical College, St. Louis	(1913)	1
St. Louis University School of Medicine	(1913)	1
Washington University, St. Louis	(1913.2)	2
Medical College of Ohio	(1895)	1
Jefferson Medical College	(1912)	1
Meharry Medical College	(1911)	1
University of Texas	(1913)	1
Marquette University, Medical Dept.	(1913)	1
FAILED		
Bennett Medical College	(1912.2) (1913)	3
Chic. Coll. of Med. and Surg.	(1910) (1911,3) (1913,9)	13
Coll. of Med. and Surg., Physio-Med., Chicago	(1910)	1
Hahnemann Med. Coll. and Hosp., Chicago	(1911) (1912)	2
Hering Medical College	(1913)	1
Illinois Medical College	(1910)	1
Jenner Medical College	(1912.2) (1913,2)	4
National Med. University, Chicago	(1903) (1904) (1909)	3
Reliance Medical College, Chicago	(1911)	1
University of Illinois	(1913)	1
Hospital College of Medicine, Louisville	(1904)	1
University of Louisville	(1907)	1
American Medical College, St. Louis	(1913)	1
Barnes Medical College	(1899) (1905) (1906) (1910)	4
St. Louis College of Physicians and Surg.	(1908) (1910)	2
Medical College of State of South Carolina	(1902)	1
Meharry Med. Coll.	(1904) (1908) (1910) (1911) (1913)	5

New Jersey October Report

Dr. H. G. Norton, secretary of the New Jersey State Board of Medical Examiners, reports the written examination held at Trenton, Oct. 21-22, 1913. The number of subjects examined in was 9; total number of questions asked, 90; percentage required to pass, 75. The total number of candidates examined was 38, of whom 32 passed and 6 failed. Twenty-six candidates were licensed through reciprocity since July 29, 1913. The following colleges were represented:

College	Year Grad.	Per Cent.
PASSED		
Georgetown University	(1913)	77.3
Howard University	(1912)	81.4
University of Louisville	(1910)	75.5
University of Maryland	(1910)	75.5
Harvard Medical School	(1912)	77.9
Dartmouth Medical School	(1912)	80.6
Columbia Univ., College of Physicians and Surg.	(1911)	77.5
Fordham University, College of Medicine	(1911)	77
Long Island College Hospital	(1911) 83; (1913) 81.2	82.5
New York Homeopathic Medical College and Hospital	(1912) 77.4; (1913) 75.5; 75.6; 84.	75.1;
University and Bellevue Hospital Medical College	(1913) 79.5; 79.7; 81.8; 83.	76.7;
Jefferson Medical College	(1910) 88; (1912) 75; 81.9; (1913) 76.3; 81.5.	75;
University of Pennsylvania	(1911) 81; (1912) 85; (1913)	75.9
University College of Medicine, Richmond	(1912)	76
University of Virginia	(1913)	83.7
FAILED		
College of Physicians and Surgeons, Baltimore	(1911)	73
New York Homeopathic Med. Coll. and Hospital	(1913)	72
University and Bellevue Hospital Medical College	(1913)	73.7, 73.7
University of Naples	(1893) 57.7; (1895)	68.9

College	Year Grad.	Reciprocity with
LICENSED THROUGH RECIPROCITY		
Howard University	(1905)	Dist. Colum.
University of Louisville, Medical Dept.	(1889)	Kentucky
Baltimore Medical College	(1901)	W. Virginia
College of Physicians and Surgeons, Baltimore	(1900)	Penna.
University of Maryland	(1911)	W. Virginia
Boston University, School of Medicine	(1883)	New York
Columbia University, College of P. and S.	(1898)	New York
Cornell University	(1910) New York; (1910)	New York
Eclectic Med. College of the City of New York	(1903)	New York
Long Island College Hospital	(1909) New York; (1912)	New York
New York Med. College and Hospital for Women	(1899)	New York
Hahnemann Medical College and Hospital, Philadelphia	(1911) Pennsylvania; (1912) Pennsylvania.	
Jefferson Medical College	(1907)	Penna.
Medico-Chirurgical College of Philadelphia	(1902)	Penna.
Woman's Medical College of Pennsylvania	(1902)	Indiana
University of Pennsylvania	(1897 Pennsylvania; (1899) Pennsylvania; (1907) Pennsylvania; (1912) Pennsylvania; (1912) Pennsylvania.	
University of Vermont	(1912) Vermont; (1912)	Vermont
Medical College of Virginia	(1909)	New York

The following questions were asked:

ANATOMY

1. Name the valves of the heart; give location, structure and function of each. 2. Trace the superficial lymphatics of the upper extremity to their termination. 3. Internal saphenous vein: Give origin and termination, name its tributaries and veins it communicates with in its course. 4. Describe the knee joint, give blood and nerve supply and actions. 5. Describe the prostate gland and give its anatomical relations. 6. Give source and distribution of the nerves of the palm of the hand. 7. What important parts lie behind the sterno-clavicular joint? 8. Superior mesenteric artery: Give origin, course and parts supplied. Name its branches. 9. In amputation, three inches below the head of the fibula, what arteries are divided? 10. Describe the elbow joint.

PHYSIOLOGY

1. Name the cranial nerves that are exclusively motor. 2. State the functions of the sympathetic nervous system. 3. Name the structures involved in a knee jerk, and state the physiology of such a reflex action. 4. Describe a white blood cell. Where are they formed and what is their function? 5. Name the factors which produce the flow of blood in the veins. 6. Describe briefly the digestion of a meal consisting of bread and butter, beef steak and a cup of sweet chocolate. 7. Give the composition of normal urine. 8. Name the functions of the bile. Give its constituents. 9. What is ciliated epithelium? Where is it found and what is its function? 10. What constitutes the lymphatic system? What forces cause lymph to circulate?

CHEMISTRY

1. What is analytical chemistry, and what is the object of qualitative analysis? 2. Mention the general physical and chemical properties of urine. 3. State the general properties of organic compounds. 4. Describe the processes of fermentation and putrefaction. 5. Explain the terms, reaction and reagent. 6. Explain the process of respiration, from a chemical viewpoint. 7. What is ozone, and how does it differ from common oxygen; under what circumstances is ozone formed? 8. Illustrate by formula the difference between ferrous and ferric salts. 9. Enumerate the metals, salts of which are frequently employed in pharmacy. 10. State the laws of constant and reciprocal proportions.

HISTOLOGY—PATHOLOGY—BACTERIOLOGY

1. Name six fixing fluids. Give formula and uses. 2. Describe the preparation of permanent specimens. 3. Give life history of

blood-cells circulating in the blood-current. 4. Differentiate leukemia and pseudoleukemia. What characterizes a true leukemia? 5. Define edema. Name varieties and causes. 6. Describe abnormal heart sounds. Give causes and varieties. 7. What diseases or conditions cause respiratory disturbances? 8. Describe the colon bacilli group and diseases caused by them. 9. Describe yeast. 10. Name sources, varieties and effects of bacteria in milk.

MATERIA MEDICA AND THERAPEUTICS

1. Podophyllum. Give official name, active principle, dose, properties and uses. 2. Glyceryl trinitrate. Give official name, dose, properties and uses. 3. Digitalis. Give official name, dose, properties and uses and preparations. Write a prescription containing digitalis for an adult. 4. Give official name, dose, properties and uses of three mercurial preparations. 5. Give official name of calcium chlorid. Dose, properties and uses. 6. Aspirin. Official name, dose, properties and uses. 7. Aconite. Official name, dose, properties and uses. Antidote for overdose. 8. Give etiology and treatment of rachitis. Write a prescription containing phosphorus for a child. 9. Describe the treatment of a case of sunstroke. 10. Ichthyol. Describe. Give dose, properties and uses. In what form would you apply it locally? Write a prescription for same.

HOMEOPATHIC MATERIA MEDICA AND THERAPEUTICS

1. Differentiate nux moschata and asafetida in hysteria. 2. Differentiate three remedies in follicular tonsillitis. 3. Give treatment for carbuncle. 4. Give treatment for acute uremia. 5. Describe the cough of pulsatilla and drosera. 6. Differentiate eupatorium and gelsemium in grip. 7. Name three remedies having aggravation after sleep; after motion; in dampness. 8. Give indications for two remedies in enuresis. 9. Prescribe for: Constipation, with no desire for stool. Rectum seems sluggish; difficult to expel even a soft stool; stools hard, knotty and scanty. 10. Prescribe for: Headache increasing through the day; bursting pain; worse from sneezing or coughing; coated tongue; thirst; gastric derangement.

PRACTICE (DIAGNOSIS) OF MEDICINE

1. Describe only the prodromal symptoms, giving duration of each, in (a) measles; (b) scarlet fever; (c) chicken-pox, and (d) small-pox. 2. Name five diseases in which the ophthalmoscope is an important aid to diagnosis, giving reasons therefor in each. 3. Define the terms "contagious," "endemical," "epidemical" and "pestilential," and name two diseases in each class. 4. Differentiate sunstroke, cerebral hemorrhage and alcoholic coma. 5. Describe four murmurs of the heart, giving name, cause, and state where each is best heard. 6. Name three causes for specific gravity of the urine (a) under 1010, and (b) over 1030. 7. Differentiate hepatic, intestinal and renal colic. 8. How much, what and how often would you feed a two-months' old bottle-fed infant? 9. Describe a typical case of acute lobar pneumonia in its different stages. 10. Define bronchial breathing. Where is it heard normally? What does it signify when heard elsewhere?

SURGERY

1. Define hernia. 2. Give symptoms and treatment of ulcer of pylorus? 3. Give indications and technic of operation for ligation of common carotid artery. 4. Differential diagnosis between fracture of upper end of radius and posterior dislocation of ulna. 5. What is varicocele? How would you treat it? 6. Give causes of retention of urine. Give treatment for one cause. 7. Give differential diagnosis between abdominal ascites and a large ovarian cyst. 8. Give technic of paracentesis thoracis. 9. Give diagnosis and treatment of phlebitis. 10. Describe the operation for empyema.

OBSTETRICS AND GYNECOLOGY

1. Give three causes for post-partum hemorrhage, and describe your procedure for its control in each case. 2. Give symptoms of threatened eclampsia; of actual eclampsia, and of death of the fetus. 3. What is ectopic gestation? Give its symptoms and its course. Differentiate it from ovarian tumor. 4. What is dry labor? How does it differ from normal? What are its dangers? 5. Given a woman in the eighth month of pregnancy, with uterine hemorrhage and increasing exhaustion. Describe your examination of the case; a condition you would find; your diagnosis, and your management of the case. 6. How would you diagnose left-occipito-anterior position; transverse position; breech presentation and face presentation? 7. What is asphyxia livida and asphyxia pallida? Give treatment. 8. Give causes, symptoms, appearance and dangers of cervical tears, and describe briefly the chief steps in an operation for their repair. 9. Describe and give uses or advantages of the following positions: Sims', Walcher's, knee-chest and lithotomy or dorsosacral. 10. Name three conditions which cause a vaginal discharge; give characteristics of each discharge, and give other symptoms which would differentiate the conditions.

HYGIENE

1. Mention the various methods of house heating, and state which you consider the best for our temperate climate. 2. State a suitable temperature for a sick room. 3. In pneumonia, how would you ventilate the sick room, and at what temperature would you advise it to be kept? 4. Differentiate between a serum and a vaccine; define natural and artificial immunity how may the latter be produced. 5. For what conditions would you examine a child in order to determine the causes of inefficiency in school work? 6. What would be your method of procedure in rendering a malarial district healthful? 7. What prophylactic treatment would be necessary for those who were undertaking this work?

JURISPRUDENCE

1. Name some of the violent causes of death. 2. How can you differentiate them? 3. What post-mortem findings would lead you to believe death to be due to $H.NO_3$? $H9.C_2$? [*Sic.* Is this a catch question or a misprint? There were at least fifteen other typographic errors in the original copy.—ED.] 4. How would you determine whether a woman was pregnant or not? 5. How might such a question affect an individual from a legal standpoint?

Book Notices

CLINICAL SURGICAL DIAGNOSIS FOR STUDENTS AND PRACTITIONERS. By F. de Quervain, Professor of Surgery, University of Basle. Translated from the Fourth Edition by J. Snowman, M.D. Cloth. Price, $7 net. Pp. 779, with 514 illustrations. New York: William Wood & Co., 1913.

If this work were to be described by a single word, that word would be "practical," as the effort of the author throughout has been to present the subject of diagnosis in the most practical manner, eliminating much that perhaps is of scientific interest but as yet of little clinical value. One is constantly reminded that it is a living patient with whom the surgeon has to deal and that the chief aim of diagnosis is proper treatment. This is well illustrated by the following sentences from the discussion of intestinal obstruction: "There is no object in being able to proclaim at the autopsy that we had correctly diagnosed the situation and nature of the obstruction. Our main object must be to diagnose when surgical relief should be offered, although we may not always know the precise position and character of the obstruction."

After presenting the subject in detail the author has the happy faculty of epitomizing or drawing a short conclusion containing the pith of the matter which is easy to remember. For instance, with reference to injuries of the brain we find this: "The following conclusion may be drawn for the diagnosis of contusion of the brain. A patient who, immediately after an injury to the skull, manifests brain symptoms which persist for a whole day and which do not fit in with the signs of a gradually increasing cerebral pressure, has sustained a contusion of the brain in the widest sense of the term. This view is supported by the presence of irritative or localizing symptoms arising from cortical areas of ascertained function. It is definitely confirmed by a persistent rise of temperature which cannot be explained by infection from without."

The method pursued by the author in arriving at a diagnosis is to reason from the symptoms to a conclusion either on positive evidence or by exclusion, rather than to assume a definite condition and arrange the symptoms to fit the condition. While technical methods are not omitted, the author has "employed those methods of investigation which are available for the general practitioner, or at any rate, which can easily be carried out for him." The illustrations, which are numerous, are quite good and almost all of them are taken from the author's own cases.

PROTEIN SPLIT PRODUCTS IN RELATION TO IMMUNITY AND DISEASE. By Victor C. Vaughan, M.D., LL.D., Dean of the Department of Medicine and Surgery of the University of Michigan, Victor C. Vaughan, Jr., M.D., A.B., Junior Attending Physician to Harper Hospital, Detroit, and J. Walter Vaughan, M.D., A.B., Junior Attending Surgeon to Harper Hospital, Detroit. Cloth. $3 net. Pp. 476, with illustrations. Philadelphia: Lea & Febiger, 1913.

This is a compilation and summation of the work which has been carried on for many years in Vaughan's laboratory at the University of Michigan. As is well known by those in touch with the progress in infection and immunity, this work began with a study of the composition and disintegration products of bacterial cells, which led to the finding of certain toxic and non-toxic products that were afterward learned to be obtainable also from proteins of all sorts. Out of this work, which incidentally yielded many items of value concerning bacterial chemistry, came also knowledge of changes which take place in foreign proteins within the animal body, whether these foreign proteins are bacterial cells, injected serums or food proteins. The ideas and results thus obtained preceded much of the modern investigation of protein sensitization and intoxication —that is, anaphylaxis or allergy. Vaughan is recognized as one of the pioneers in this most important line of progress, his work having been of particular value because it approached the subject from the chemical side at a time when practically all the investigation was solely by animal experiment. The conception of anaphylaxis as an intoxication with the products of protein disintegration, formed through the action of specific ferments developed as a biologic reaction to the foreign proteins and an integral part of the scheme of immunity to

infection, was original with Vaughan, and has since been corroborated and developed at length by many other investigators, so that it is now the current theory of anaphylaxis. These American studies foreshadowed the work on "anaphylatoxins" and "protective ferments" in association with which the names of Friedberger and Abderhalden are especially conspicuous at present.

In addition to the work which has been done under the inspiration of the senior author, the book reviews much of the work of other investigators which bears on the subjects under discussion. There is also a presentation of the underlying principles and the conclusions which have been reached. While the authors are concerned primarily with presenting certain original work for consideration, the general air of fairness to other workers, and of seeking for the truth rather than insistence on unqualified acceptance of their own hypotheses, is noticeable and commendable. The collection and discussion of this large amount of material, which has heretofore been widely scattered in the literature, will be of great assistance to other investigators and to students of immunity in general. In the history of the early steps of our study of the important field of allergy this contribution will hold a prominent place. We would criticize but one thing—the title. "Protein Split Products" is an awkward but common translation of the German *Spaltungsprodukte*. It is not the split products of protein, nor yet protein split products—it is the products of protein-splitting, or better, cleavage, that we have under consideration.

INNERE SEKRETION. IHRE PHYSIOLOGISCHEN GRUNDLAGEN UND IHRE BEDEUTUNG FÜR DIE PATHOLOGIE. Von Prof. Dr. Artur Biedl. Second Edition, Part II. Paper. Price, 28 marks. Pp. 692, with 75 illustrations. Berlin: Urban and Schwarzenberg, 1913.

This completes the second volume of the new and greatly enlarged second edition of this, the most exhaustive and authoritative of all the treatises of the glands of internal secretion. The general characteristics of the book have been sufficiently discussed in our reviews of the first edition and of the first volume of this edition. In the second volume are found the completion of the discussion of the adrenal, and the sections on the carotid and coccygeal glands, the hypophysis, the pineal gland and the internal secretions of the sexual glands, pancreas, alimentary canal and kidneys. As bearing eloquent testimony to the use the German readers expect to make of their books is the publication of a bibliography of 260 pages. It is scarcely necessary to say that even this imposing array of titles entirely fails to comprehend all the really valuable contributions that have been made to the subject of internal secretions, but it is by far the best compilation yet made, just as the book represents the best available source of information in this field. Because of the author's critical consideration of so much of the enormous literature, and especially because he speaks with the insight obtainable only by one who has himself made investigations of importance to the subject, this work is to be unqualifiedly recommended as the most reliable and useful work on the ductless glands and internal secretions that has yet been produced.

MENDEL'S PRINCIPLES OF HEREDITY. By W. Bateson, M.A., F.R.S., V.M.H., Director of the John Innes Horticultural Institution. Cloth. Price; $3.50 net. Pp. 413, with illustrations. New York: G. P. Putnam's Sons, 1913.

The author states that in writing this book it was his object to give a succinct account of discoveries in regard to heredity made by the application of Mendel's method of research. Among the biologic sciences, of which medicine is one, the study of heredity occupies a central position, and there can be no doubt that a perception of the truth in regard to the function of transmission will greatly contribute to the progress of medicine as well as to sociology and the industrial arts of the breeders of plants and animals. Bateson describes the original experiments of Mendel, defines "dominant," "segregation" and "allelomorphism," considers the consequences of segregation and the meaning of purity of type, and gives a list of sixty-one structural characters already proved to follow the rules of mendelian inheritance. To the complicated question of the heredity of color about a third of the book is devoted. The investigations on the more important problems of heredity and sex are sketched, and the scanty evidence as to mendelian inheritance in man considered. Of normal characteristics the dominance of eye pigment is about all that is certainly established. The complexity of the transmission of color characteristics is great. More is known of the transmission of disease and malformations which are in general dominant. A synopsis of the studies of Farabee, Drinkwater and Walker of brachydactyly is given in some detail. Color-blindness is considered among the sex-limited affections. In the discussion of human heredity it is stated that nothing in our present knowledge can be taken as a reason for regarding consanguineous marriages as improper or especially dangerous. Rules are given for the collection of evidence as to human descent. Intermediates between varieties and miscellaneous exceptions and uncomparable phenomena are considered in detail, and here as in other parts of the book the author criticizes "the law of ancestral heredity" of Galton, and the method of investigation pursued by Pearson and the English biometric school. The bearing of the mendelian discoveries on biologic science is sketched, and the nature of the unit characteristics, nature and moment of segregation, the relation of the chromosome to the unit factors, as asymmetry and variations and reversal of varations are discussed, as well as the bearing of the theory on evolution. The appendix contains a short biography of Gregor Mendel, with translations of his papers on hybridization and *Hieracium*.

EYE-STRAIN IN EVERY-DAY PRACTICE. By Sydney Stephenson, M.B., C.M., D.O., Ophthalmic Surgeon to the Queen's Hospital for Children, London. Cloth. Price, $1.50 net. Pp. 139. New York: Paul B. Hoeber, 1913.

This is a collection of articles on eye-strain published by the author during the past ten years, the last one being the Middlemore postgraduate lecture delivered in Birmingham in December, 1910. Mr. Stephenson well represents the newer ophthalmology. He is one of those who study the patient as well as the eye, and whose interest is not entirely absorbed by pathology and surgery. With reference to eye-strain as the cause of all our ills, he takes a wise middle ground, criticizing both the extreme enthusiasts and the unbelievers. He quotes many cases from his large experience which aptly illustrate the common and the uncommon effects on comfort and health of uncorrected and imperfectly corrected errors of refraction. He emphasizes repeatedly the importance of complete cycloplegia in the study of these cases, and puts no age limit on the use of cycloplegics. He calls attention again and again to the often overlooked fact that perfect vision is not at all inconsistent with eye-strain, and that it is the small and easily concealed error that often causes the most persistent and annoying headache, nausea, vertigo or other symptom. It would be well if every practitioner, and especially every neurologist, would read and ponder these essays. The references to the literature on the subject are worth the price of the book to any one interested. The references to the work done in America, beginning with the classical papers of Dr. Weir Mitchell, are especially gratifying.

GOUT. Its Etiology, Pathology and Treatment. By James Lindsay, M.D., M.R.C.P. Cloth. Price, $1.50. Pp. 212. New York: Oxford University Press, 1913.

This is a well-written, concise statement of facts and theories pertaining to gout. The author has analyzed statistics in an interesting way. The chemistry of gout is discussed, but nothing is contributed to our knowledge of the subject. The brief chapter on the bacteriology of gout is interesting, as it briefly outlines the various theories which have been published assigning to bacteria a causal relationship to the disease. These theories, however, are not sufficiently substantiated by facts. The clinical description of typical gout is excellent and is accompanied by pictures of joints, ears, eyelids and fingernails which are extremely good. Roentgenograms are also reproduced and help the reader to understand the pathology of the disease; but this part of the book is open to criticism because atypical gout is too briefly and imperfectly described. There is nothing new in the treatment outlined by the author. What he advises is conservative and praiseworthy.

Miscellany

The Diary of a Dublin Medical Student (1831-1837)

In the *Dublin Journal of Medical Science* for November, 1913, p. 360, Dr. T. Percy C. Kirkpatrick, registrar of the Royal College of Physicians of Ireland, prints the diary of Robert Thompson, M.D. (Glasgow, 1838), during his student period at Steevens' Hospital and the School of the Royal College of Surgeons in Dublin (1831-1837). Thompson, after graduation, commenced practice in Johnstown County, Kilkenny, where he worked with conspicuous success as surgeon and obstetrician until his death, April 8, 1875. Having been apprenticed to Abraham Colles in October, 1831, with what he calls "a pretty fair, though not well-grounded, education," he began to attend lectures while in residence at Steevens' Hospital, "where a number of wild fellows messed in our room, generally spent our evenings sparring and drinking punch and going to the upper gallery at the theater." Cholera appearing in Dublin in April, 1832, he was attacked with "nostalgia and other nervous symptoms, which disappeared immediately upon my reaching home on Easter Sunday, 1832." Returning to Steevens in October, he began to work hard at dissecting but was soon laid up with small-pox caught from a subject. In 1833-1834 his chum was William Colles, son of the famous surgeon, with whom he "spent a jolly winter, drank a deal of punch, went to the theater at least twice a week, passed the second examination May, '34." Most of his time through his whole student's career was taken up with a pleasant combination of conviviality, outdoor life and hospital work, diversified by other Irish experiences, of which we may give a few citations:

Nov. 15, '33: I am on duty to-day, and had a good deal to do in the way of dressing fractures; took in an old man with a broken humerus. At present there are only six resident pupils in the house besides Tuthill.

July, 1834: Read some Béclard's "General Anatomy." . . . Have paid nurse in advance until Dec. 9, 1834. [The nurse in those days usually looked after the resident students' rooms and laundering for a consideration.] Read very hard for two months for the third class examination, which I passed on November 15.

May 22, 1835: I have been examined to-day by Hart on the physiology of the nerves, next on the anatomy of the prostate and prostate glands, of which I missed not a word; then on the blood tumour of the scalp. Adams on Medical Jurisprudence.

March 1, 1835: Got a green frock coat from Walker.

May 24, '35: Have been made an Orangeman to-day; fee 7s. 6d.; paid Bryan 1s. 6d. for washing; sundries 3s. 6d.

June 2, '35: Paid Benson £2 2s. for dissection; dined at Finish, 2s. 2d.

June 11, Monday: I am completely stuck for money; have not written home.

June 26: Slept badly; bought 5 pounds of tea; Mun and I dined at the Northern; borrowed £1 from John Hely.

July 3: Went with crew of six to sea; the swell was too heavy at the lighthouse; did not go past it; had a great lunch and heavy drink on the wall.

Tuesday, July 30: John Hely called here to-day; dined with him at the hospital; saw a contused and lacerated wound of the ankle from the ball of the great toe to the inner side of the os calcis, which was rough, and the tendon almost divided, the posttibeal nerve quite bare, and the artery could be seen pulsating; the posttibeal tendon was bared. Mr. Harrison put in three points of suture, one anterior, one under the malleolus and another posterior to it; the wound dressed with lint dipped in blood; there were globules of synovia in the blood.

August 2: Went with Mun to Marradyke after plover.

Sunday, 10: Walked to Templetuohy Church; beat the car there and back; while coming home fell into a ditch.

Wednesday, 13: Commenced to write a translation of Lucian. . . . Went to Ballyknockan in the evening; fell off the mare.

Saturday, 16: Went in the car to church; poulticed my leg; continued poultice; reading Lucian.

October 29, '35: Tom Neville is dead; got a pair of Trews; Henry is gone to Kilkenny; my hand very sore where the cow bit me in endeavoring to extract a potato from her throat.

Dec. 5, '35: Bought a hat, £1 3s.; paid Evans 2s.; paid O'Keife for putting down my name for lectures £4 4s.; received from Henry to pay gun 15s.; ordered a coat from Gately, £3 10 s.; paid Maunsell 5; boots vamped, 12s. 6d.; attended my first midwifery case.

Monday, Dec. 14, '35: Visited the Meath Hospital; went round with Graves; will attend there; was called up four times last night.

December 22: The weather is very cold; thermometer in my room 8 below zero; had a case in Trinity place; retained placenta; got Maunsell to extract it.

Dec. 25, X Mass: The woman in Trinity Place is very well, but the pulse is 130; no pain in the hypogastrium, but a very slight tenderness; no fever.

Jan. 12, '36: We have established a mess; got a receipt from the butcher for £3 11s. 6d.

February 10: Received a cheque for £5 to pay for tea.

February 15: Had a breech presentation in Mary Street.

March 22: Saw Cusack tie the carotid for aneurism.

April 8: The statue of King William blown up.

April 25: Painting the boat.

April 26: Saw a flap operation of forearm.

April 27: Got my certificate, M. Medica, M. Jurisprudence, Surgery.

May 8: Moore and Hunter (who are both dead since, one in Limerick and the other at Madras) returned from Glasgow; we all, with Gelstone, supped at O'Hara's, on leaving which place we got up a row with two watchmen, who were well beat; they got away, however, and brought back twelve others, who soon turned the tables; Somerville was knocked down and eight of us arrested and fined 30s. each. Lent J. Hely £1; he and Chas. came here to-day.

May 19: Returned Gerald Osbrey's pistoll and thermometer.

May 24: Had a breach case to-day.

June 4: Reading Cooper on the testicle; wrote home.

June 17. Grind on exostoses, a desease [*sic*] of which I know very little.

June 26: Dined in a cabin, consumed a deal of mountain dew.

June 28: Dissecting.

June 29: Dissecting.

July 26: Dined at Steevens' with W. Colles.

August 8: At a case of twins with Maunsell for nineteen hours.

October 12: I am 20 to-day; dined at O'Hara's in the evening; at Bull's got into a fight; Brown and I well beat by six or seven fellows; J. Hely lodged a pound for him and me; in the morning went to College Street; no prosecution.

Jan. 17, '37: Have put in my first day's examination taken by Palmer on the testicle hernia, by Hart on General anatomy of, by Harrison on fauces, Tongue.

January 23: Passed the College; examined by Rumly on fever, by Mr. Colles on inflammation of bladder, naevi; answered well.

January 24: Hair cut; went to the Protestant meeting.

January 27: Received from my father £10.

January 31: Became very ill this morning with sore throat and fever.

February 1: Sent for Colles; confined to bed for a week with influenza.

January 13: Had my certificate of residence signed by Cusack, Wilmot.

June 22: I must go to Dublin for my diploma.

Although he became a licentiate of the Royal College of Ireland, in 1837, Thompson did not graduate at Dublin, but took his degree at Glasgow a year later. In spite of his fondness for skylarking and conviviality, he seems to have been a good student and a successful practitioner. On the whole a graphic, if sketchy, presentation of a medical student's life in the late thirties, the palmy days of Colles, Stokes, Adams and the other leading lights of the Dublin school.

Defective Schoolchildren.—The medical examination of schoolchildren in New York, which became compulsory under the law in 1913, was begun in 1907 as volunteer work by the State Department of Health. During the first years of this work the statistics were not considered reliable, but during the past year the work has been so extended and systematized that the results, while lacking in some details, are still worthy of consideration. The total registration in the public schools of the state last year, exclusive of the

cities, was 415,930. Of this number 30 per cent. were examined for physical defects by the teacher. The exact number reported as having some defect of sight, hearing, nasal respiration or the teeth has not been carefully determined, but will be about 30 per cent. The total number of defective children found in the 124,526 examined was 81,867, being 65.6 per cent. The highest percentage of defects was shown in the teeth, 29.7 per cent. having defective teeth. This percentage is thought to be much too low, as Buffalo schools showed a percentage of 46.7 per cent., and in the New York City schools an examination of the reports of 23,000 children in fifteen schools shows a percentage of about 50 having defective teeth. Next to teeth the largest number of defects was found in distant vision, 25.8 per cent. The percentage of defects, except those of the eyes, decreased with advancing age. In the departmental reports there was no decrease in those having colds or suffering from catarrh, 14.6 per cent. being subject to frequent colds. There were 13,195 reported as being mouth-breathers, and 34,020, or 27.9 per cent., as having defective teeth, and 2.5 per cent. as not being up to the standard of health of the other children or as being truants. In New York City about 14 per cent. were found to be mouth-breathers. This tabulation shows that distant vision decreases about 9 per cent. between 7 and 16 years of age; discharging ears 29 per cent. There was also a decrease of 28 per cent. in frequent earaches between the ages of 13 and 16, and 32 per cent. in deafness between the same ages. There was an increase between the ages of 7 and 16 of 13 per cent. having inflamed eyes or squinting; of 41 per cent. in headaches; 35 per cent. in those having frequent colds, and 92 per cent. in those wearing glasses. There was an increase of 25 per cent. between 13 and 16 years of age in the focusing power; 24 per cent. in the mouth-breathers, and 32 per cent. of those having defective teeth. Backward children increased 62 per cent. between 7 and 13 years of age, and those having defective hearing 16 per cent. The defects noted in the New York reports are about the same as those of Massachusetts.

Advent of the Socialized Man of Service.—The commercialized man only is passing; the socialized man of service is arriving. The eyes of the world have been focused on commercial conquest without considering the man-portion of the problem. We are entering on a forward movement of humanity when man will count for more than dollars; the age of the child, home and sanitation; an age when a captain of preventive disease and crime will be hailed with equal acclaim as a captain of industry. . . . The Chicago Woman's Club, parental schools, home and truancy movements, boy scout movement, juvenile courts are skirmish lines behind which the social forces of the nation are aligning. Prevention of disease and crime is the shibboleth of the race-betterment workers. The workers in this field are determined that the needs of the home, school and sanitation shall be brought up abreast with commercial and industrial activities; that America shall no longer be the home of preventable diseases and preventable crime; that this republic, as originally designed, shall be the home of the child, the mother, the toiler in every productive and constructive field of labor.—D. E. McClure, *Bull. Mich. State Board Health.*

Infusion Method of Treating Varicose Veins.—B. Schiassi of Bologna, Italy, has recently issued a pamphlet, profusely illustrated, showing the details of his method of flushing the vein with an aqueous solution of iodin. The principle is not new, but the substances used for the purpose hitherto have had more or less of a caustic action, and this, he declares, is wrong. The fluid he uses merely stimulates the inner lining of the vein to proliferate; this obstructs the lumen, and the tendency to varicose enlargement is thus arrested. He severs the vein through an incision about 6 cm. long, below the knee and again in the upper third of the thigh, or else at the ankle, according to the location of the principal trouble. He then injects the fluid into the vein from the upper stump in the lower incision, and the fluid pours out of the distal stump in the upper incision. He makes the infusion through a glass tube 2 or 3 mm. in diameter, with an olive tip with a single large window; this end is worked into the vein; the other end is connected with the syringe by a rubber tube. The fluid is a mixture of 1 gm. metallic iodin, 1.1 gm. potassium iodid and 100 gm. distilled water. The method has been applied in hundreds of cases with invariably satisfactory results, he states, and adds that embolism is impossible with this technic. The solution prevents instead of favoring coagulation, and the stumps not utilized are ligated. We will loan the pamphlet on request accompanied by three 2-cent stamps.

Medicolegal

Liability of Company Contracting to Furnish Employees with Physician

(Neil vs. Flynn Lumber Co. (W. Va.), 77 S. E. R. 324)

The Supreme Court of Appeals of West Virginia holds that when an incorporated lumber company agrees with an employee, in consideration of monthly deductions therefor from his wages, to furnish a competent and skilled physician to attend and treat him for any sickness or accident occurring while in its service, it is bound thereby to select and retain for that purpose a physician having the knowledge and skill ordinarily possessed by other members of his profession in the same community.

Should the company fail to perform the duty so imposed, and by reason thereof the employee be injured, it will be liable in damages to him, to the same extent as the physician himself would be were he sued for the injury. In such a case, the injured employee may maintain against his employer either what is termed an action in assumpsit on the contract, or trespass on the case for the tort.

The contract stated is not ultra vires, or beyond the corporate powers of the company to make.

It is true that the relation of master and servant, principal and agent, has no application as between a corporation and a surgeon employed by it to render professional services to its sick or injured employees, and that the doctrine of respondeat superior, or let the superior answer, has no application. But this rule is subject to the important proviso that there is a liability on the employer to the servant unless in pursuance of its undertaking it exercises reasonable care in selecting one having the knowledge and skill ordinarily possessed by other members of his profession in the same community.

Damages for Alleged Malpractice in Treatment of Shoulder

(Stanford vs. Hyde (Conn.), 87 Atl. R. 738)

The Supreme Court of Errors of Connecticut, in affirming a judgment in the plaintiff's favor for $2,000 damages for alleged malpractice, says that in the conflict of the testimony the jury might reasonably have found that a fall from the ladder was the cause of some injury to the plaintiff, and that if the shoulder was thereby dislocated the defendant ought in the exercise of reasonable care to have discovered it. The most serious issue of fact in the case was whether or not one of the injuries suffered by the fall was a dislocation of the shoulder. There was evidence before the jury from which the existence or non-existence of this fact might have been found. The court cannot hold that the jury in finding its existence acted so unreasonably as to warrant the setting aside of the verdict. Nor can the court hold that the damages assessed by the jury were so excessive that the verdict ought for that reason to be set aside, when the special damages might have been found to be $478 and the injury to have resulted in an appreciably permanent impairment of the shoulder affecting the plaintiff's pursuit of his trade.

Must Have and Exercise Skill

(Hinkle vs. Smith (Ga.), 77 S. E. R. 650)

The Court of Appeals of Georgia, in affirming a judgment for the plaintiff, says that the evidence was conflicting, but the evidence for the plaintiff supported her contention that

she sustained damage by reason of the unskilful manner in which her dislocated shoulder was reset by the defendant, although a finding would have been authorized that the shoulder was properly set, and the plaintiff's injury was the result of a redislocation, brought about from causes over which the defendant had no control. The evidence authorized a finding that the plaintiff had been damaged by reason of unskilful surgical treatment by the defendant.

Even if the instructions of the court to the jury which were complained of could be construed as submitting to the jury the issue as to whether the defendant possessed reasonable surgical skill, they were not erroneous. The jury being authorized to find that the defendant failed to exercise a reasonable degree of care and skill, it was wholly immaterial whether the injury to the plaintiff resulted because the defendant did not possess reasonable skill as a surgeon, or whether, having such skill, he failed to exercise reasonable care in the treatment of the plaintiff.

One undertaking to practice medicine or surgery must bring to the exercise of his profession a reasonable degree of care and skill. If, in performing an operation, a surgeon fails to exercise such a degree of care or skill, he will be liable for any damage which may ensue, without reference to whether he did not possess the requisite amount of skill or whether he negligently failed to exercise skill which he did possess.

Medical Services Not a Consideration for a Release

(Kennedy vs. Spokane, Portland & Seattle Railway Co. (Wash.), 132 Pac. R. 50)

The Supreme Court of Washington says that the plaintiff was injured while in the employ of the defendant. Subsequently he went to the company's offices and there saw the claim agent, also the company's head physician, and was presented by the claim agent with a written release of damages with the request that he sign the release, which he did. This release recited that, in consideration of medical and surgical attention furnished to him by the company, he released it from all liability, etc. The first question to be determined was: Did the medical services furnished by the company's physician to the plaintiff constitute a consideration for the release? If the rendition of these services by the physician and the acceptance of them by the plaintiff did not create the relation of debtor and creditor between them, then the services would not be a consideration for the release. In other words, if they were rendered under such circumstances that a recovery could not have been had for them in an action against the plaintiff, then they would be insufficient as a consideration. It was not contended that the evidence failed to make out a prima facie case of negligence on the part of the company which caused the original injury. When negligence is once established, the person or corporation being guilty thereof becomes liable for the expenses incurred for medical attention and physician's services. And, on the hypothesis that there was negligence which produced the original injury, the services of a physician, being an element of legal liability, would not be a consideration for the release of damages.

Testimony as to Roentgen-Ray Pictures Without Their Production—Not Best Evidence

(Marion vs. B. G. Coon Construction Co. (N. Y.), 141 N. Y. Supp. 647)

The Supreme Court of New York, Appellate Division, Third Department, says that in this personal injury case one of the plaintiff's witnesses, a physician, after testifying that he was present when certain Roentgen-ray pictures were taken, saw them taken, saw them developed, and looked at the plates immediately after they were developed, proceeded to tell what the pictures showed. Another physician also told what he thought the plates showed. There was no demand made by the defendant for the production of the plates; no hint or suggestion that they were desired. They were in fact in court, so the plaintiff stated in his brief. The court can see no error at all in this Roentgen-ray incident. The evidence showed that nobody but a Roentgen-ray expert could tell anything from the plates, and that if they had been produced they would have done the court, jury, or the defendant's ordinary physicians no good.

The court does not think that the doctrine that an ordinaty photograph is the best evidence of what it contains should be applied to Roentgen-ray pictures. They constitute an exception to the rule concerning ordinary documents and photographs, for the Roentgen-ray pictures are not, in fact, the best evidence to laymen of what they contain. Generally they are no evidence at all, signifying nothing whatever, except to the expert. The opinion of the expert is the best evidence of what they contain—the only evidence.

If there had been a demand for these pictures in court, or a request that they be submitted to the inspection of the opposing experts, and these rights had been denied the defendant, such an error would be serious. But whatever harm befell the defendant, if there was any harm at all, came to it by reason of its own failure to demand what it was entitled to, and what it would unquestionably have received by the mere asking. To sustain this contention of the defendant would be to tolerate worse than a technicality—a trick.

Sufficiency of Complaint in Action for Malpractice—When Barred

(Finch vs. Bursheim (Minn.), 142 N. W. R. 143)

The Supreme Court of Minnesota affirms an order overruling a demurrer to the complaint in this action for alleged malpractice in the treatment of a dislocated hip joint. The court holds that the allegation that the defendant "negligently and unskilfully" treated the injury after undertaking the case was clearly sufficient as against a demurrer. Perhaps a motion to make the complaint more definite and certain might have been sustained, but it was not open to serious question that the complaint stated a cause of action.

The court also holds that an action against a physician and surgeon to recover damages due to negligent and unskilful treatment of the plaintiff is based on a breach of his contract to treat the plaintiff with ordinary professional skill and care, and is an action on contract. It is therefore not barred by the provision of the Minnesota statute of limitations which provides that actions for libel, slander, assault, battery, false imprisonment, or other tort resulting in personal injury shall be commenced within two years. The six-year limitation applicable to actions on contracts applies.

Proof in Action for Services in Another State

(Corcia vs. Giuliano et al. (N. J.), 87 Atl. R., 94)

The Court of Errors and Appeals of New Jersey affirms a judgment of the Supreme Court affirming a judgment for the plaintiff, a physician, obtained in the district court of East Orange, N. J., against the defendants, who were husband and wife, for medical services rendered their daughter in the city of New York. The court holds that a motion for a nonsuit was properly denied, which asked for the nonsuit on the grounds: (1) that the plaintiff had not introduced in evidence his license as a physician and surgeon in the city of New York; (2) that the plaintiff had not deposited with the clerk of Essex County a copy of any diploma of a legally chartered medical college or university in good standing, or some medical society having power by law to grant diplomas.

Power of Boards of Health to Regulate Removal of Dead Animals

(Schwarz Bros. Co. vs. Board of Health of Jersey City (N. J.), 87 Atl. R. 463)

The Court of Errors and Appeals of New Jersey holds that a municipality may lawfully make reasonable regulations prescribing the time within which the dead animals may be removed or disposed of and the manner of such disposition. The sole justification for the exercise of this power is the conservation of the public health. An ordinance passed by the board of health prescribing such regulations is valid so far as it relates to dead animals which are a nuisance or offensive or likely to be dangerous to the public health; but

there does not seem to be any sound or valid basis for a provision in the ordinance which requires the owner to obtain a special permit before the removal of the carcass, where the dead animal is not a nuisance and not offensive or dangerous to the public health by reason of the disease or diseases of which it died or for any other reason, and therefore in that respect and to that extent the ordinance is unreasonable. Moreover, the court deems beyond the powers of the board a provision in such an ordinance which delegates to the health officer the power to determine when and under what conditions a permit shall be granted to the owner of a dead animal for its removal. That is a delegation of power which should be exercised by the board of health itself.

Society Proceedings

COMING MEETINGS

Amer. Association of Anatomists, Philadelphia, Dec. 30-Jan. 1, 1914.
American Physiological Society, Philadelphia, Dec. 27-29.
Society of American Bacteriologists, New York, Dec. 31-Jan. 2.
Western Surgical Association, St. Louis, Dec. 19-20.

SOUTHERN MEDICAL ASSOCIATION

Seventh Annual Meeting held at Lexington, Nov. 17-19, 1913

The President, DR. FRANK A. JONES, Memphis, Tenn., in the Chair

Cerebrospinal Meningitis with Special Reference to Certain Signs or Measures

DR. RANDOLPH LYONS, New Orleans: The relative importance of Brudzinski's signs in adults has not been determined carefully. From the point of view of early diagnosis the eight measures fall into the following order of importance: Lumbar puncture established the diagnosis in 95 per cent. of the twenty-one cases which I analyzed. Rigidity of the neck could be demonstrated in twenty cases on first examination, or 95 per cent. Kernig's sign was present on first examination in 90 per cent. of the cases and at some time during the disease in 100 per cent. The "neck sign" falls into fourth place. Brudzinski's statement with regard to the relatively greater value of his "neck sign" over Kernig's sign in children does not hold good for adults. It was found positive on first examination in 76 per cent. of the cases and could be elicited at some time during the course of the affection in 90.4 per cent. Brudzinski's contralateral (identical) reflex was present on first examination in only 33.3 per cent. of the cases. It was positive at some time during the disease in 50 per cent. of the cases. Babinski's sign occurred in but three cases, or 11.6 per cent., at some time during the disease. In two of the cases it was positive on admission. Macewen's sign was found to be of practically no value in this series. It could be demonstrated in but one instance. This patient was the only child (5 years) in the group. The presence or absence of the patellar reflex was found to be of no apparent diagnostic importance.

Meningococcus Carriers

DR. WILLIAM LITTERER, Nashville, Tenn.: The viability of the meningococcus isolated from carriers varies greatly in different epidemics. The variability in the resistance is not a reliable index as to the degree of toxicity of the microorganism. The meningococcus appears to be of so short vitality and so fragile an organism outside of its natural habitat (the human body) as to lead to the inference that direct transmission is probably the only means of conveying the disease. The great majority of healthy persons who harbor the organism can resist the infection. Only 2 per cent. of the carriers in our series developed the disease. The spray cannot reach all the deep recesses of the upper air-passages; nevertheless it is indicated in all carriers, for the reason that it either destroys or mechanically cleanses out all cocci with which it comes in direct contact, thereby lessening reinfection, and at the same time reducing droplet infection to the minimum. There is apparently no means at our command in which the "persistent carrier" can with any degree of regularity be rendered free from the carrier state. In institutional epidemics the wisest procedure is a prompt isolation of all patients, the search for carriers and their detention, together with the general use of the spray.

The Intrameningeal Treatment of Tabes Dorsalis and Cerebrospinal Syphilis

DR. THOMAS R. BOGGS and DR. R. R. SNOWDEN, Baltimore: We treated by the intraspinal injection of serum removed one hour after the intravenous injection of salvarsan or neosalvarsan. The Swift and Ellis technic was followed, except that we injected larger doses of the undiluted serum. Blood was withdrawn one hour after the intravenous administration of salvarsan and allowed to clot. The next day the serum was removed, centrifugalized and heated at 56 C. (132.8 F.) for half an hour. Lumbar puncture was then done, cerebrospinal fluid withdrawn and exactly enough serum injected to replace the fluid. The amounts varied between 20 and 35 c.c., and the treatment was repeated from every ten to twenty days until the spinal fluid was normal in respect to the cell-count and Wassermann. In every case there was marked improvement, the cell-count dropping to normal and the Wassermann becoming less marked and in most of the cases entirely negative. The most constant result was the disappearance of the lightning pains and other sensory disturbances, and this resulted in a more cheerful mental attitude and a corresponding improvement in the appetite and nutrition. The effect on locomotion was slower in development and less marked, but definite, and in some cases great improvement was achieved, rather more pronounced, apparently, than in patients treated by smaller doses of diluted serum.

DISCUSSION

DR. R. H. VON ESDORF, Mobile, Ala.: The best thing to do is to isolate the patients as early as possible and surround them with the best conditions that can be had, which in many cases is not feasible at the homes of the patients. If a small hospital could be established and the patients isolated, it would lower the mortality from this disease materially.

DR. LILLIAN H. SOUTH, Bowling Green, Ky.: For one case in which a diagnosis of meningitis was made from a swab of cotton sent in a sterilized container to the laboratory there developed one hundred cases in one town, with thirty-five deaths. Three counties were infected. The child from whom the swab was taken died before it could receive the serum. Another child in the same family was seriously ill from meningitis.

DR. C. C. BASS, New Orleans: Rigidity of the neck is an important sign in connection with the diagnosis of meningitis. Meningitis is accompanied constantly by fever. These two signs are sufficient to justify a suspicion of the presence of meningitis. Lumbar puncture is indicated, with examination of the cerebrospinal fluid.

DR. L. E. LA FETRA, New York: Pneumonia may simulate meningitis, and if there is suspicion of meningitis, lumbar puncture should be made. In certain cases of poliomyelitis there will be fever and, at times, leukocytosis and stiffness of the neck. These are the cases which have marked sensory symptoms and hypersusceptibility of the nervous system generally.

DR. L. W. ELIAS, Asheville, N. C.: The directions are to give one dose of serum every day for four days, and if the patient improves, to wait and watch. Other directions which seem to be more accurate are to give the serum until the fluid is germ-free.

DR. C. C. MCLEAN, Birmingham, Ala.: I have seen two cases of sudden death following injection of the serum. The blood-pressure should be taken along with the injection, and as soon as the blood-pressure begins to rise, the injections should be stopped.

DR. HENRY HANSON, Jacksonville, Fla.: The use of autogenous vaccines is not of much benefit in carrier cases. A

great many of these are simply mechanical carriers, and the organisms are not very closely associated with the circulation of the individual; hence it would be unusual to expect a vaccine to be very efficacious. Another point to consider is the virulence of the organism in carrier cases.

Milk in Its Relation to Infant Mortality

DR. HENRY ENOS TULEY, Louisville, Ky.: The formation of infant-welfare associations is one of the ways to reduce infant mortality. The medical profession is remiss in not taking a more active part in all social service movements and should help to organize an association for the distribution of clean milk. The work of the nurse in the homes is also a great help. Under no circumstances should swill be fed to dairy cattle, even if legislative enactment is necessary before the practice is stopped. Recent investigations have pointed out a new menace, namely, the infection of cow's milk with the *Bacillus abortus*, and it has been advocated that certified milk as well as market-milk should be pasteurized, or preferably boiled under official supervision. Milk is a carrier of contagion, and it can be rendered safe possibly for the market-supply by pasteurization or sterilization. These procedures should be under the supervision of municipal control, and the consumer educated in the care of the milk in the home.

Treatment and Cure of Malaria

DR. C. C. BASS, New Orleans: Perhaps the most perfect specific in medicine is quinin for malaria, but it is a specific only when administered properly. The asexual cycle of malarial plasmodia which causes the common symptoms of malaria in man takes place partly in the blood-stream and partly in the capillaries. The plasmodia lodge in the capillaries and remain until they segment. The time spent lodged in the capillaries varies with the different species of plasmodia. The estivo-autumnal parasite, the most malignant of them all, remains lodged in the capillaries for at least thirty-six out of each forty-eight-hour period or cycle. During the time the parasites are lodged in the capillaries they are beyond the reach and effect of quinin in the blood-stream. Therefore it is necessary to keep quinin in the blood for a period of at least forty-eight hours and preferably seventy-two hours or three days. Thirty grains of quinin on each of three consecutive days always destroys all asexual plasmodia in the patient. There are no exceptions. Relapses result in some manner not now well understood from reproduction of sexual plasmodia or gametes, which are usually present in variable number. They reproduce in seven days and multiples of seven days, and give rise to the relapses occurring usually on the seventh, fourteenth, twenty-first and sometimes twenty-eighth days. Gametes are not killed by quinin or any other drug but their products of reproduction are killed by quinin. Thirty grains of quinin, once a week, for six weeks, will always sterilize the blood of all plasmodia after the asexual parasites have been destroyed by the first three days of quinin treatment. Continuous administration, especially of small doses of quinin, favor or increase the number of gametes and insure relapse or chronicity.

Treatment of Pellagra

DR. SEALE HARRIS, Mobile, Ala.: In beginning the treatment of pellagra I usually give several small doses of calomel, 1/20 grain, every hour until ¼ grain is given, then bismuth subnitrate in doses of from ½ to 1 dram, with 5 grains of phenyl salicylate every two or four hours as may be necessary to control diarrhea. I have rarely found it necessary to use opium. When there is absence or deficiency of hydrochloric acid, dilute hydrochloric acid with pepsin often relieves the gastric symptoms and will not infrequently control diarrhea. Colonic irrigation with normal salt solution is often helpful. When there is stomatitis with ptyalism, potassium chlorate, given internally, yields splendid results. Mild antiseptic mouth washes, as diluted liquor antisepticus alkalinus, are helpful. Fowler's solution should be given in ascending doses of from 1 to 15 or even 20 drops, three times a day, or until the physiologic effects are obtained.

Pathology of the Heart in Rheumatic Infection in Children

DR. W. W. HARPER, Selma, Ala.: In children endocarditis is often the only symptom of rheumatism. A primary attack of rheumatic endocarditis is not ulcerative, but usually leaves the heart-valves in such a condition that vegetations frequently develop during a second attack of rheumatism. Such valves are especially vulnerable should the patient be attacked subsequently by any of the pus-producing bacteria, such as the pneumococcus, streptococcus or colon bacillus.

Central Cirrhosis of the Liver

DR. V. H. BASSETT, Savannah, Ga.: I had a case of central cirrhosis of the liver with acute endocarditis of gonorrheal origin in a man aged 22, following an acute attack of specific urethritis. The symptoms were fever with delirium, dyspnea, hemoptysis, icterus and generalized edema. The course of the disease was about eight weeks. At necropsy an acute ulcerative and vegetative endocarditis of the mitral valve, with a stenosis, was found, with hypertrophy and dilatation of the right side of the heart. The lungs showed the changes of chronic passive congestion. The liver did not resemble a nutmeg liver, but differed from a normal liver only in being somewhat cloudy, paler and somewhate firmer in consistency. The condition of fibrosis of the centers of the lobules was not suspected from the anatomic condition, but was found on making microscopic sections of the liver. The fibrosis was diffuse, affecting the centers of practically all the lobules, and occupied a space of a round or oval character, about equal in width to one-fourth of the radius of the lobule. The connective tissue was young and there was little pigmentation or other evidence of a previous chronic passive congestion of any extent.

DR. W. A. DEARMAN, Long Beach, Miss.: I collected from a bed which a pellagrin had occupied for six months, a large number of bedbugs. I induced these bedbugs to bite and abstract blood from the large vein underneath the wing of a full-grown chicken. After a few minutes they were removed to a test-tube. This process was repeated at intervals of every other day for about three weeks; many of the bugs by this time were dead. Up to this time (a period of about four months) no lesions have developed in this chicken. On several occasions my attention was attracted by the malignancy of certain cases of pellagra in persons in whose premises were found mangy dogs, heavily infested with fleas, (*Ctenocephalus serraticeps*). These dogs were in the habit of sleeping on the beds in the daytime. One of these patients, a negro woman, gave a history of having been heavily infested with fleas from this dog, and had noticed no signs of her pellagrous condition until she had come in possession of the dog. I placed the dog in a cage with a full-grown rhesus monkey and kept them continuously associated for thirty-seven days. The monkey soon became heavily infested with fleas from this dog, as they could be seen crawling on her body and buried in the skin. The dog died from emaciation and a black diarrhea. After three months no signs of pellagra have developed in the monkey.

I feel inclined to doubt that the cause of the disease is lurking in spoiled corn. I believe that pellagra is in all probability an insect-borne disease, and the dog- and cat-flea should be looked on with suspicion.

The Abderhalden Test

DR. WILLIAM KRAUSS, Memphis, Tenn.: The causes of failure may be said to be the serum, the placenta, faulty dialyzing thimbles, old or improperly stored ninhydrin solution or faulty technic. I prefer Schwartz' plan of boiling 5 c.c. of the dialysate with 0.1 c.c. of ninhydrin. I use a marked wide test-tube and restore the bulk after boiling for one minute. There have been no failures either way in the two tests made since adopting my latest technic, but I expect to meet them with more experience. I think that inactivated serum is the best control.

Tuberculosis

DR. E. C. THRASH, Atlanta, Ga.: I believe that tuberculosis is as certainly an alimentary disease primarily as is typhoid.

My experience in handling large numbers of children of tuberculous parents has been that practically all of them have tuberculous adenitis, and are positive to the Moro and von Pirquet tests, showing that they have become infected from their parents. I rarely find one with lung involvement. Also most of the children on whom I have held a post-mortem examination have died of chronic wasting diseases due to disturbances of nutrition and have shown tuberculous infections in the lymph-nodes of the abdomen, with normal lungs.

Distinction between an Infection by Tubercle Bacilli and Tuberculosis

DR. MARY E. LAPHAM, Highlands, N. C.: Tuberculosis enters every home. All children are infected before maturity. It is impossible to avoid the infection. Children should be examined by experts in order to detect the first changes before harm has been done. Tuberculosis in well persons is the most dangerous because it is never suspected. All animals have tuberculosis because the bacilli are universally present in their food. Four hundred thousand children in the United States are infected with tubercle bacilli from the milk of cows. It is not enough to protect a child from exposure to contagion. The infection by tubercle bacilli is not prevented by quarantine or segregation. The development of this inevitable infection must be arrested by its prompt detection. This can be assured only by regular examinations by competent experts. The prevention of tuberculosis can never be accomplished by obliteration. Detection and no delayed diagnoses are our surest safeguards.

Protection for the Postsanatorium Tuberculous Patient

DR. L. B. MORSE, Hendersonville, N. C.: I wish to lay down some general rules for the guidance of ex-sanatorium patients: Place yourself under the care of a good physician. Approximate the sanatorium life closely, particularly in the beginning. Rest in bed for one week. Increase exercise (walking) with exceeding care both as to time and to distance, and note results. Take the precaution to "rest before getting tired." Make regular hours a conscientious habit, both as to rest, exercise, meals and sleep. Keep away from every sort of amusement and entertainment until thoroughly cured. Reduce visiting to a minimum. Maintain, if possible, a good body-weight. Be scrupulously particular regarding the morning bowel movement. With increasing strength, exercise an increasing pride in the maintenance of a good bodily posture. Taboo all dissipation. Protect yourself if possible from all worry and strain. Do not remain in the same room with a patient suffering from any sort of acute inflammation of the nose or throat. Finally, remember always that the things that made you well, in the main, are the things that will keep you well.

The Evolution of the Treatment of Ectopic Pregnancy

DR. STUART MCGUIRE, Richmond, Va.: All surgeons agree that an operation should be done in a case of unruptured tubal pregnancy as soon as the diagnosis is made. There is a serious difference of opinion among the best surgeons as to when to operate in a case after rupture occurs. I favor an immediate operation, not only because it is in accord with general surgical principles, but also because I have seen the practice save apparently moribund patients. I am opposed to the removal of the opposite tube, unless it is clear that the tube is diseased. If by leaving it I have subjected some patients to a second operation that might have been avoided, I have with equal certainty made possible the birth of some babies that otherwise would not have come into existence.

Ovariotomy Sub Partu

DR. W. KOHLMAN, New Orleans: The important points in the treatment of these complications are: 1. Vaginal ovariotomy in small tumors without adhesions is to be followed by delivery by the natural passages. 2. Cesarean section and abdominal ovariotomy should be the operation of choice in all cases of solid tumors, cystic tumors, with probable adhesions, or intraligamentous development, or in all conditions in which a prolonged and difficult labor is suspected.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Diseases of Children, Chicago

December, VI, No. 6, pp. 381-448

1 *Duodenal Ulcers in Infancy. L. E. Holt, New York.
2 *Casein in Infant Feeding. H. I. Bowditch and A. W. Bosworth, Boston.
3 *Parotitis Complicated with Meningitis. G. N. Acker, Washington, D. C.
4 *Case of Congenital Cyst of Thyroid in Child Aged 1 Year, Producing Death by Asphyxiation. H. C. Clark, Ancon, C. Z., and A. G. Farmer, Gatun, C. Z.

1. **Duodenal Ulcers in Infancy.**—Regarding the treatment of this condition, Holt says: Medical treatment is to be symptomatic only, and surgical treatment is as yet inadvisable in most cases. He reports four fatal cases and reviews the literature.

2. **Casein in Infant Feeding.**—The authors claim that formulas with exact percentages of protein can be obtained by determining the percentage of casein in the creams and milks used, and further, that powdered dry casein and paracasein can be used in making up shortage of protein in place of fat-free or skim milk. This powdered dry casein or paracasein is very easily digested, and is capable of furnishing all the protein requirements of the growing baby.

3. **Parotitis Complicated with Meningitis.**—Acker cites two cases and reviews the literature briefly.

4. **Congenital Cyst of Thyroid in Child.**—During the past three and a half years, at the Board of Health laboratories, Ancon, 21 specimens of thyroid glands showing large colloid cysts associated with hemorrhages and fetal adenomata have been received from the surgical clinic of Ancon Hospital, and 4 similar cases have been found at necropsy during the same interval of time. Sixteen of them occurred in females and 9 in males. Thirteen of these cases were in Americans, all but one being females. Seven were in male Spaniards, one instance in a male Panamanian and one in a male Greek. Only 3 of the 26 cases occurred in negroes: 2 female Jamaicans and a female Barbadian. The ages ranged from 19 to 61 years, the average being about 38 years. A fair idea of race incidence at Ancon Hospital may be had from a recent analysis of 1,500 successive necropsies in which 1,088 were West Indian negroes, 230 Spanish-Indian mixture, 108 Spaniards, 25 Americans, the other 49 being divided among the various countries of the old world. Thus, the authors state, one may form an idea as to the relative frequency of thyroid disease among the Spaniards and Americans and the low percentage in the black race.

American Journal of Medical Sciences, Philadelphia

December, CXLVI, No. 6, pp. 781-936

5 *Pathology of Thyroid in Exophthalmic Goiter. L. B. Wilson, Rochester, Minn.
6 *Clinical and Pathologic Relationship of Simple and Exophthalmic Goiter. H. S. Plummer, Rochester, Minn.
7 *Demonstration of Depressor Substance in Serum of Blood of Patients Affected with Exophthalmic Goiter. J. M. Blackford and A. H. Sanford, Rochester, Minn.
8 Antityphoid Vaccination. F. F. Russell, Washington, D. C.
9 Cutaneous Manifestations of Septicemia. J. W. Churchman, New Haven, Conn.
10 Further Experience in Surgical Treatment of Brachial Birth Palsy (Erb's Type). A. S. Taylor, New York.
11 Further Experiences with Stretching of Pylorus. M. Einhorn, New York.
12 *Large-Cell Splenomegaly (Gaucher's Disease): Clinical and Pathologic Study. N. E. Brill and F. S. Mandelbaum, New York.
13 Metallic Poisons and Nervous System. G. A. Moleen, Denver.
14 Metabolism, Prevention and Successful Treatment of Rheumatoid Arthritis: Second Contribution. R. Pemberton, Philadelphia.

5. **Thyroid in Exophthalmic Goiter.**—A detailed pathologic study by Wilson of fixed tissue preparations from 1,208 thyroids, removed from patients whose condition would ordinarily have been diagnosticated exophthalmic goiter, showed that 79

per cent. of the thyroids contained large areas of marked primary hypertrophy and hyperplasia. A parallel clinical study has shown that for a period of three years all patients with true exophthalmic goiter, and from whom gland tissue was removed, fall into this list. In the series of 1,208 so-called "exophthalmic goiters" plus 585 so-called "simple goiters," or a total of 1,793 thyroids, but four instances of marked primary hypertrophy and hyperplasia of the parenchyma have been noted in cases which did not show clinical symptoms of true exophthalmic goiter. Three of these four patients were children. Twenty-one per cent. of the 1,208 glands studied were either regenerations or adenomas. Clinically, while all of these were markedly toxic, all were chronic and none of them would now be grouped clinically as true exophthalmic goiter. By assuming that the symptoms of true exophthalmic goiter are the results of an excretion from the thyroid, and by attempting to determine the amount of such excretion from the pathologic data, Wilson says one is able to estimate in a large series of cases the clinical stage of the disease with about 80 per cent. of accuracy and the clinical severity of the disease with about 75 per cent. of accuracy. It would therefore appear that the relationship of primary hypertrophy and hyperplasia of the parenchyma of the thyroid to true exophthalmic goiter, is as direct and as constant as is primary inflammation of the kidney to the symptoms of true Bright's disease. Any considerable finding to the contrary Wilson believes to indicate either inaccurate or incomplete observations on the part of the pathologist or clinician, or both.

6. **Exophthalmic Goiter.**—Of 2,917 cases coming to operation between Jan. 1, 1909, and Jan. 1, 1913, and analyzed by Plummer, 42.8 per cent. were hyperplastic and 57.2 per cent. were non-hyperplastic. Of the hyperplastic 99.2 per cent. were toxic and 0.8 per cent. were atoxic. Of the non-hyperplastic 23.3 per cent. were toxic and 76.7 per cent. were atoxic. Patients coming under observation with non-hyperplastic toxic goiter gave a history of having first noted the goiter at the average age of 22 years, and the evidence of intoxication at the average of 36.5 years: The corresponding ages for hyperplastic goiter were respectively 32 and 32.9 years.

Throughout the series the number of cases in which the clinician failed definitely to note and attribute constitutional symptoms to the thyroid and which were later diagnosed by the pathologists hyperplastic thyroid, varied from two cases in 1909 to four cases in 1912. The pathologic reports failed to show the presence of hyperplasia in the cases in which exophthalmos was noted by the clinician six times in 1909, four times in 1910, twice in 1911, and not in a single instance in 1912. As to whether the symptom-complex accompanying hyperplastic goiter is to be directly attributed to disturbed thyroid function, Plummer says that while he has so considered it in his paper only as a matter of convenience for pointing out the association of the clinical and pathologic findings, he calls attention to a point in support of this theory that, so far as he knows, has not hitherto been made, namely, that an individual, aged 22 years, with an adenoma of the thyroid, has a definite chance of developing a train of symptoms during the thirty-sixth year so similar to the symptom-complex associated with hyperplastic thyroid, that the best-trained diagnosticians are constantly confusing the two conditions. He does not believe that the symptom-complex of non-hyperplastic toxic goiter can be associated with any definite pathologic change in the thyroid.

The order of onset of the most important symptoms of exophthalmic goiter based on the average of the Mayo series was as follows: (1) cerebral stimulation; (2) vasomotor disturbances of the skin; (3) tremor; (4) mental irritability; (5) tachycardia; (6) loss of strength; (7) cardiac insufficiency; (8) exophthalmos; (9) diarrhea; (10) vomiting; (11) mental depression; (12) jaundice, and (13) death.

7. **Depressor Substance in Serum of Blood of Patients with Exophthalmic Goiter.**—The serums from twenty-eight patients having exophthalmic goiter were used by Blackford and Sanford. Other serums examined included those from normal individuals, from patients having goiters without apparent intoxication, and from patients presenting the picture of a long-standing intoxication, presumably due to adenomas of the thyroid. Only the serums from patients with active symptoms of exophthalmic goiter and with markedly hyperplastic glands, as shown by microscopic examination, produced in the dogs injected any definite symptoms of cardiovascular depression.

The results of these experiments convince the authors that fresh extracts made from exophthalmic thyroids contain a powerful depressor substance. A powerful depressor substance likewise exists in the serums obtained from certain cases of exophthalmic goiter. The latter substance is present in direct proportion to the clinical acuteness and severity of the disease. The serums from patients with non-hyperplastic thyroids do not have a depressor action. After an active depressor dose of the serum from a case of exophthalmic goiter the depressor action of the extract of an exophthalmic goiter is weakened or abolished. The converse is also true.

12. **Gaucher's Disease.**—Brill and Mandlebaum believe that the disease starts simultaneously in the spleen, bone-marrow and lymph-nodes. In the last, however, it may appear somewhat later or be slower in development, an assumption which finds its support in the fact that they have found in a very early case, a child aged 4½ years, the process in some of the nodes to be far less advanced than in the spleen and marrow.

American Journal of Orthopedic Surgery, Philadelphia

October, XI, No. 2, pp. 193-365

15 Roentgenography of Vertebral Column in Profile in Pott's Disease. J. Calve and H. Lelievre, France.
16 *Experience with Foerster's Operation. S. J. Hunkin, San Francisco.
17 *Importance of Positive Support in Curative Treatment of Weak Feet and Comparison of Means Employed to Assure It. R. Whitman, New York.
18 Treatment of Hollow Foot (Pes Cavus). G. G. Davis, Philadelphia.
19 *Recurrent Anterior Dislocation of Shoulder. J. K. Young, Philadelphia.
20 Mechanical Treatment of Some Fractures, viz., (1) Lower End of Humerus; (2) Both Bones of Leg. F. E. Peckham, Providence, R. I.
21 *Neglected Infantile Paralysis. W. Blanchard, Chicago.
22 *Heliotherapy (of Rollier) as Adjunct in Treatment of Bone Disease. R. Hammond, Providence, R. I.
23 Value of Exhaustive Critical Studies and Generalizations in Chronic Joint Diseases. H. W. Marshall, Boston.
24 Development of Orthopedic Teaching in America. C. F. Painter, Boston.
25 *Orthopedic View of Treatment of Fractures. R. Jones, Liverpool, Eng.
26 Method of Osteotomy of Lower End of Femur in Cases of Permanent Flexion of Knee-Joint. R. B. Osgood, Boston.
27 Duralumin, New Alloy for Orthopedic Appliances. J. K. Young, Philadelphia.

16, 17, 21 and 22. Abstracted in THE JOURNAL, June 14, pp. 1916 and 1917.

19. **Recurrent Anterior Dislocation of Shoulder.**—Young first locates the pectoralis major muscle. A grooved director is placed beneath this muscle and its lower portion divided. The long tendon of the biceps may be displaced inward, and the broad flat tendon of the latissimus dorsi can be hooked up by the finger, or by some blunt instrument, such as an Allis' dissector; the insertion of the tendon is exposed and the lower half divided. No attention is paid to the capsular ligament. The bicipital groove was exposed by an incision over the space between the deltoid and pectoralis major muscles, and the cephalic vein was displaced outward. The pectoralis major and the deltoid muscles were brought together with deep catgut sutures. The skin was closed with a continuous suture and the arm dressed in an extended position on a triangular splint and kept in that position for a period of two weeks. Following the operation, and on the recovery of the patient, there was no loss of power over this shoulder as compared with its fellow, nor has there been a recurrence, although the man has again resumed his occupation and has taken part in several games of soccer since.

25. **Treatment of Fractures.**—Fractures of the shaft of the humerus, says Jones, may be troublesome from two causes—either on account of damage to the musculospiral nerve

through injury or inclusion in callus, or due to non-union, the latter being generally caused by inefficient fixation. Many cases of supposed permanent damage to the musculospiral nerve are cured in a few weeks by application of a splint which holds the wrist in dorsiflexion. The patient generally goes about from the beginning of treatment. There is not room for the thick splint frequently employed to lie comfortably in the axilla between the patient's arm and the body, and hence the arm is not as firmly fixed as it should be. Sheet-metal splints occupy very little space. The best method in Jones' opinion, of setting these fractures, especially when working single-handed, is the following: First get ready three sheet-metal splints. The external one extends from the external condyle to well above the shoulder and its upper end is bent over to form a sort of shoulder cap. A short splint extends from above the internal condyle to the anterior fold of the axilla, and a similar posterior one to the posterior fold of the axilla. Flex the elbow to an angle of about 60 degrees and sling the wrist to the neck, with the patient sitting in a chair. A loop of bandage is put around the flexure of the elbow and does not reach the floor. By putting one foot in this loop, the surgeon can apply as much extension as he chooses, while both hands are free to manipulate the fractured ends into correct position. The splints are applied and squeezed up till they fit closely around the arm. A turn of sticking plaster now binds them into a cylinder fitting the arm. A sheet of wadding is then placed between the arm and the chest. The whole is secured with a broad bandage carried over the shoulder and the part of the external splint which is turned over like a shoulder cap. This prevents shortening, for the lower end of the cylinder fits around the arm above the condyles. As the whole arm is in a close-fitting cylinder, displacement cannot easily take place, and the patient is quite comfortable. Except to free the musculospiral nerve from callus, operation is rarely necessary, for even if there is some overriding of fragments a little shortening of the arm does not give rise to any serious impairment of function to the ordinary man. All fractures through the condyles and indeed all fractures about the elbow, except fracture of the olecranon, are best treated in the fully flexed position. For the first few days the forearm, fully supinated, should be bandaged to the upper arm in fullest flexion; after this it is sufficient to keep the wrist slung short up under the chin.

Boston Medical and Surgical Journal

December 4, CLXIX, No. 23, pp. 817-852

28 Nervous Irritability of Chronic Renal Disease. W. H. Robey, Boston.
29 Method of Promoting Efficiency of Out-Patient Clinic. M. M. Davis and E. W. Barron, Boston.
30 Report of Voice Clinic, September, 1912, to June, 1913, Out-Patient Department of Psychopathic Hospital. W. P. Lucas, San Francisco.
31 Conditions and Treatment of Stuttering. C. Charnley, Boston.
32 Digitalis: Its Action and Uses. W. R. Steiner, Hartford, Conn.
33 Treatment of Vocal Disorders. C. Charnley, Brookline, Mass.

Bulletin of Johns Hopkins Hospital, Baltimore

December, XXIV, No. 274, pp. 363-396

34 *Treatment of Leukemia with Benzol. L. F. Barker and J. H. Gibbes, Baltimore.
35 *Bence-Jones Proteinuria in Leukemia: Report of Four Cases: Effect of Benzol on Excretion of Protein. T. R. Boggs and C. G. Guthrie, Baltimore.
36 Cauterization of "Inoperable" Carcinoma of Cervix of Uterus. H. A. Kelly and J. C. Neel, Baltimore.
37 *Tests for Hepatic Function: Clinical Use of Carbohydrates. A. L. Bloomfield and S. H. Hurwitz, Baltimore.
38 *Tests for Hepatic Function: Lactose Tolerance as Influenced by Liver Necrosis of Chloroform Poisoning. S. H. Hurwitz and A. L. Bloomfield, Baltimore.

34. **Treatment of Leukemia with Benzol.**—In the case cited by Barker the course of benzol administration extended over approximately eleven weeks during which period the total number of white blood-cells returned to normal, the red blood-cells increased from 3,600,000 to 5,000,000, the hemoglobin changed from 65 per cent. to 82 per cent., and the patient's general condition showed definite improvement. In as far as he can judge of this new line of therapy in leukemia from the observation of the case reported, Barker shares the belief of most authors as to its efficacy in reducing the white blood-cells, and in leading to an associated subjective improvement of the patients. His patient progressed in a satisfactory manner with the exhibition of benzol alone, but he feels that the possible value of other accessory measures, such as Roentgen rays, arsenic, thorium-X and radium in the therapy of leukemia should be kept in mind. The ultimate place of benzol in the treatment of leukemia, polycythemia and Hodgkin's disease can be determined only through further studies which include careful clinical observations. Barker emphasizes the facts, first, that benzol does possess dangerous toxic properties; second, that its clinical effects are not yet clearly understood, and, third, that the greatest care should be exercised in its administration. A studious regard for the dosage as thus far determined, a watchfulness for the manifestations of poisoning that are well defined and easily detected, and a willingness to employ other measures in conjunction with this drug, in Barker's opinion, are means that will serve to give the new treatment a fair trial and prevent its falling into an undeserved disrepute. Certainly, no patient should be treated by benzol unless he can be kept under continuous close observation; for the present, therefore, it may be well to restrict its use to the treatment of patients in hospitals, rather than to run the risks attendant on its extension to domiciliary practice.

35. **Bence-Jones Proteinuria in Leukemia.**—So far as Boggs and Guthrie have been able to ascertain, three of their cases are the first reported instances of Bence-Jones proteinuria in association with myeloid leukemia. It has never been observed in the acute forms of the disease, either lymphatic or myeloid, and, including the cases presented here, only eight times in the chronic varieties. The Bence-Jones protein alone was present in two cases, while Möner's body also was present in the other two cases, as well as serum albumin in one case. The excretion of the Bence-Jones body was small in amount, which seems to be characteristic when it occurs apart from multiple myeloma. The chlorid output was normal in one case, which is markedly different from the condition found in two other cases and in cases of myelomatosis and carcinomatosis. In two cases the effect of the benzol treatment is especially noteworthy, in that a marked reduction or eventual disappearance of the proteinuria and its associated polyuria, occurred, parallel to the diminution in the leukocytosis and apparent approach of the bone marrow to a more nearly normal condition. These cases furnish additional confirmation of the previously expressed view, that Bence-Jones proteinuria is not essentially dependent on one disease, but is a manifestation of disturbances in the bone marrow affecting endogenous metabolism.

37. **Tests for Hepatic Function.**—A consideration of the extrahepatic factors involved in the sugar regulating metabolism, the influence of the glands of internal secretion and of the vegetative nervous system, the ability of other tissues than the liver to handle sugar, and the ability of the uninjured liver substance to compensate in disease leads the authors to say that the sugars are theoretically unsatisfactory as tests for hepatic insufficiency. There are a series of great practical difficulties in applying the tests; namely, nausea, vomiting and diarrhea after feeding, faulty absorption, intestinal fermentation, portal obstruction with collateral circulation, retention of sugars in nephritis, and inconstancy in the diet. There are serious objections to the methods as they have been applied; namely, the use of arbitrary amounts of sugar, and the use of a definite standard of excretion. An analysis of the reports show their significance to be lessened owing to confusion in the conception of hepatic insufficiency, insufficient clinical data and neglect of the practical considerations mentioned.

38. **Idem.**—Hurwitz and Bloomfield are convinced that there is experimental evidence to show that in the intestinal tract of dogs lactose is split into its constituent molecules—dextrose and galactose—and that after feeding lactose to dogs, galactose is excreted in the urine. Studies by various workers show that when lactose is split, the liver can form glycogen from galactose, but to a more limited extent and with greater difficulty than from the other monosaccharids. The experi-

ments cited by the authors show that it is more accurate to determine the tolerance of an animal before producing a liver injury than to accept arbitrary standards of normal tolerance, expressed either in total number of grams or in grams per kilogram of body weight. Whereas the normal tolerance of dogs for lactose expressed in grams per kilogram of body weight is fairly constant, the total number of grams tolerated by different animals shows wide variations. Eck fistula dogs show a reduced tolerance for lactose, which, however, may result from flooding of the systemic circulation with sugar rather than from liver injury. In susceptible animals, central necrosis produced by chloroform poisoning results in the reduction of the lactose tolerance by 50 per cent. or more. In one animal with chronic passive congestion of the liver, no reduction in the lactose tolerance could be demonstrated.

Journal of Outdoor Life, New York

December, X, No. 12, pp. 352-382

39 Tuberculosis and Anti-Tuberculosis Work in Japan. A. K. Faust, Sendai, Japan.
40 Hygiene of Bedroom and Baths. H. L. Shively, New York.
41 Decline in Tuberculosis Death Rate. F. L. Hoffman, Newark, N. J.
42 Rational Treatment of Tuberculosis. G. M. Sternberg, U. S. Army.

Medical Record, New York

December 6, LXXXIV, No. 23, pp. 1013-1058

43 Serologic Tests in Cerebral Hemiplegia. C. L. Dana, New York.
44 Colds and Their Relation to Physics of Atmosphere. C. M. Richter, San Francisco.
45 Venereal Diseases and Practical Eugenics in Small Communities. E. H. Williams and J. S. Brown, Montclair, N. J.
46 Vienna, Postgraduate Medical and Surgical Mecca. A. M. Fauntleroy, U. S. Navy.
47 *Gumma of Prostate and Bladder. J. O. Rush, Mobile, Ala.
48 Partial Facial Paralysis due to Traumatism. B. Rosenbluth, New York.
49 *Tuberculosis and Von Pirquet Test in Children. L. Shalet, New York.
50 Case of Pneumococcus Septicemia. G. A. Rueck, New York.
51 Hemostat as Safety Blade Holder. A. M. Miller, Danville, Ill.
52 New Kidney Cushion. W. G. Vincent, New York.

47. **Gumma of Prostate and Bladder.**—Six intravenous and one intramuscular injection of salvarsan and twenty-six intravenous injections of neosalvarsan were given by Rush to a patient 66 years old, with good result, viz., the disappearance of edema, the disappearance of all bladder and prostatic symptoms, and the continued improvement with the steady use of the drug.

49. **Tuberculosis in Children.**—Shalet urges that no ambulant case of possible tuberculosis occurring in children under 16 years of age, be diagnosed as such unless the same reacts positively to the von Pirquet test.

Michigan State Medical Society Journal, Grand Rapids

December, XII, No. 12, pp. 635-682

53 Shall Total Death Rate in Cancer Be Ascribed to Malignancy? W. Fuller, Chicago.
54 Great Need of Early Diagnosis of Uterine Cancer. J. H. Carstens, Detroit.
55 *Endocarditis due to Streptococcus Rheumaticus and to Streptococcus Viridans. R. H. Babcock, Chicago.
56 Heart in Pregnancy. H. A. Freund, Detroit.
57 Value of Anoci-Association in Abdominal Surgery. H. W. Hewitt, Detroit.
58 Two Cases of Abnormally Situated Placentae. W. H. Morly, Detroit.
59 Abdominal Cutaneous Reflexes in Diagnosis of Acute Abdominal Diseases. R. R. Smith, Grand Rapids.
60 *Stenosis of Cervix Uterus: Treatment by New Method. J. D. Matthews, Detroit.

55. **Endocarditis.**—Babcock emphasizes the fact that there must exist some focus of infection from which streptococci may gain access to the lymph-stream and blood. Such a focus may exist in the appendix, gall-bladder, intestine or any other closed cavity, but without doubt the most frequent atrium of infection is the tonsil, and the viridans streptococcus has been obtained from an inflamed tonsil at the height of articular rheumatism. Furthermore, by cultural methods *Streptococcus hemolyticus* has been converted into the *Streptococcus viridans*, and the latter into the pneumococcus. The human body is capable of transforming the *Streptococcus hemolyticus* into the *Streptococcus viridans*, so that a child with chronically infected tonsils may get an acute endocarditis or the far more terrible form caused by the viridans organism. Consequeently, whenever a victim of valvular disease, particularly of aortic regurgitation, has tonsils that have been inflamed and are no longer healthy, Babcock says they should be extirpated, and he emphasizes the fact that tonsillectomy in a child with valvular disease is safer under ether and by a rapid, skilled operator than if the patient is left to the risk of streptococcus infection from the tonsils left *in situ*. In other words, the risk of this operation is less than is the danger of subsequent ulcerative endocarditis. Chronically diseased tonsils are not always enlarged, nor are they always red, for even small buried tonsils may and often do contain in their center a pocket of pus.

That malignant endocarditis due to the *Streptococcus viridans* is most often the sequel of a throat infection has been impressed on Babcock by the frequency with which he gets a history of the ill-health having begun as a so-called "attack of the grippe." Autogenous vaccines by assisting the system to destroy circulating bacteria may lessen the intensity of the symptoms and may even retard but cannot reach the organisms imbedded in the vegetations and protected by a covering of fibrin. Consequently our aim should be the prevention of this frightful malady, and since the preponderance of evidence is in favor of diseased tonsils as the atrium of infection it should be our duty to so inform patients with valvular lesions. The complete enucleation of the tonsils may not be a guarantee against future endocarditis of this viridans type, but it is a safeguard and hence should be resorted to whenever an individual having once suffered from endocarditis is subject to recurrences of tonsillar inflammation or has tonsils that are no longer healthy and capable of performing their normal function.

60. **Stenosis of Cervix Uteri.**—After proper dilatation Mathews seizes the anterior lip of the cervix with a volsellum forceps; the lateral borders are grasped by tenaculum forceps; a straight scissors is used in dividing the posterior, or under lip, to the internal os. A curved needle with a silk or No. 1 catgut is introduced, catching the mucous coat and brought through, taking up the mucous coat posteriorly; the ligature is tied. The same procedure takes place on the two lateral surfaces of the wound. The vagina is packed with sterile gauze which is left in position twenty-four hours. The patient is placed in bed for ten days, after which she is allowed to return to her home.

Mississippi Medical Monthly, Vicksburg

December, XVIII, No. 8, pp. 147-166

61 Treatment of Laryngeal Diphtheria. T. F. Clay, Tutwiler.
62 Adenoids. D. G. Mohler, Gulfport.
63 Three Cases of Tetanus Neonatorum. L. D. Harrison, Clarksdale.

New Orleans Medical and Surgical Journal

December, LXVI, No. 6, pp. 431-502

64 Removal of Wire Nail from Stem Bronchus to Lower Lobe of Right Lung. R. C. Lynch, New Orleans.
65 Suprapubic Intraurethral Prostatectomy: Report of Case. F. C. Walsh, San Antonio, Tex.
66 Results of Sanatorium Treatment of Tuberculosis: Advantages, Cost, Etc. E. L. McGehee, New Orleans.
67 *New Device for Treatment of Fractures. F. W. Parham and E. D. Martin, New Orleans.
68 Emergency Surgery of Skull, with Case Reports. R. C. Kemp, Baton Rouge.
69 Acne: Treatment and Prognosis. J. N. Roussel, New Orleans.
70 Problem of Mental Diseases as Neglected Study: Its Cost to Society and Individual. C. V. Unsworth, New Orleans.
71 Typhoid. E. S. Matthews, Bunkie, La.

67. **Device for Treating Fractures.**—The device used by Parham and Martin—a band from 1 to ⅜ of an inch in width, 6 inches long, with a slit in one end and a small hole in the other—is passed around the bone quite easily by bending to a suitable angle; this is readily accomplished, as the bands are made of malleable iron. The free end is then inserted through the slot in the instrument, made fast to the pin on the screw lever, and with it sufficient force is exerted to make it fit snugly around any unevenness of the bones. It is fixed in position by slightly relaxing the screw as the instrument

is turned back over the slit, and is cut to any desired length by holding between the blades of a strong pair of scissors or bone-cutters and worked to and fro several times. The cut end is then pressed down and the band remains fixed.

New York Medical Journal

November 29, XCVIII, No. 22, pp. 1045-1092

72 Cure of Ataxia. W. J. M. A. Maloney, New York.
73 Diagnosis of Arteriosclerosis. L. F. Bishop, New York.
74 Medical Treatment of Surgical Cases. J. H. Jopson, Philadelphia.
75 Infections of Hand. I. S. Haynes, New York.
76 Criminal's Place in Psychiatry. H. M. Friedman, New York.
77 Surgical Aspects of Exophthalmic Goiter. R. E. Davison, Pittsburgh.
78 Study of Action of Oxygen, Hydrogen Dioxid and Ozone Gas on Growth of Certain Bacteria. S. E. Finch, New York.
79 Report of Case of Carcinoma of Face. E. S. Maxson, Syracuse.
80 Acute Pellagra or Dermatitis Exfoliativa? W. H. Spurgin, London, Eng.

December 6, XCVIII, No. 23, pp. 1093-1140

81 Physical, Mental and Moral Vigor of Our Schoolchildren. S. A. Knopf, New York.
82 *Oil-Ether Anesthesia. J. T. Gwathmey, New York.
83 Cancer of Uterus and American Society for Control of Cancer. L. Broun, New York.
84 Diagnosis of Acute Abdominal Conditions. J. T. Scheel, Philadelphia.
85 Indications for Operating in Acute Mastoiditis. G. H. Cocks, New York.
86 Relation of Hyperthyroidism to Nervous System. A. C. Buckley, Philadelphia.
87 High Frequency Cauterization in Treatment of Urethral Caruncle. S. Wiener, New York.
88 Cancer. J. A. Guthrie, Portsmouth, Va.

82. **Oil-Ether Anesthesia.**—The mixture used by Gwathmey for adults (2 ounces of olive oil and 6 ounces of ether) is given with the patient in bed on the left side, in the Sim's position, a convenient lifter having previously been placed under him. A small catheter, well lubricated, is inserted 3 to 4 inches within the rectum; to this catheter a funnel is attached. The mixture should be poured slowly into the funnel, at least five minutes being consumed in administering 8 ounces, the usual amount required. It is best not to withdraw the tube immediately, but to wait until the patient is partly unconscious and the muscles are relaxed. From five to twenty minutes (according to the percentage used) should be allowed for the anesthetic to take effect, before the patient is moved. The patient should then be lifted gently on a stretcher and carried to the operating room. The anesthetist at this time should see that a clear airway is maintained when necessary, by placing a finger under the symphysis of the lower jaw. If the patient shows sign of approaching cyanosis, loss of lid reflex, stertor, or embarrassed respiration of any kind, two or three ounces of the mixture should be withdrawn by a small rectal tube placed 4 to 6 inches up the rectum. If the breathing is easy and regular, with the reflexes active, the patient will be found to be relaxed and in surgical narcosis as far as the operation is concerned. At the end of the operation, two small rectal tubes should be placed in position, as high up the colon as convenient without traumatism, and cold water soapsuds injected into one tube and drawn off through the other; 2 to 4 ounces of olive oil should then be introduced into the rectum and the tubes withdrawn. The patient should be gently returned to bed, with as little jolting or handling as possible, the room should be darkened, and free ventilation secured. For children under 6 years of age, a 50 per cent. solution should be employed, allowing 1 ounce of the mixture for every 20 pounds of body weight. For patients from 6 to 12 years of age, use a 55 to 65 per cent. solution, without preliminary medication, keeping the patient quiet, and allowing twenty to thirty minutes for the full effect. Allow 1 ounce for every 20 pounds of body weight, as before.

For patients from 12 to 15 years of age, use the same percentages and amounts, with possibly the addition of 1/12 grain of morphin and 1/200 of a grain of atropin given hypodermically as a preliminary.

From 15 years upward, a 75 per cent. mixture is employed, the amount and preliminary medication varying with the size and general condition of the patient and the same rule being followed as to quantity, that is, 1 ounce for every 20 pounds of body weight. For an adult weighing about 160 pounds 8 ounces would be required. This represents the usual dose for the average patient.

Washington Medical Annals, Washington, D. C.

November, XII, No. 6, pp. 279-351

89 Diet in Gastric Ulcer and Hyperchlorhydria. J. B. Nichols, Washington, D. C.
90 Obstructions about Pylorus. J. R. Verbrycke, Washington, D. C.
91 Serotherapy of Epidemic Cerebrospinal Meningitis. H. A. Ong, Washington, D. C.
92 Large Fibroma of Ovary. D. S. Lamb, Washington, D. C.
93 Nitrous Oxid and Oxygen Anesthesia. C. N. Chipman, Washington, D. C.
94 Intraspinous Injection of Salvarsanized Serum in Treatment of Syphilis of Nervous System, Including Tabes and Paresis. W. H. Hough, Washington, D. C.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

November 22, II, No. 2760, pp. 1341-1416

1 *Treatment of Syphilis in Its Earlier Stages. T. W. Gibbard and L. W. Harrison.
2 Treatment of Syphilis at Royal Naval Hospital, Chatham. G. B. Scott.
3 "Standard" Opaque Meal for Radiographic Examinations. A. C. Jordan.
4 Some Acute Abdominal Cases. G. F. Aldous.
5 Anaphylaxis. W. E. Dixon, G. S. Woodhead, F. H. Thiele, D. Embleton and E. W. Goodall.
6 Action of Asbestos Minerals and Allied Materials on Bacterial and Other Substances. M. Coplans.
7 Action of Asbestos on Radium and Thorium in Solutions of Their Salts. S. A. Edmonds.
8 *Hyperthyroidism: Its Experimental Production in Animals. R. Farbant.
9 Value of Blood-Count as Aid to Diagnosis in Obscure Bacterial and Other Infections. H. M. Galt.
10 Empusa Muscle as Carrier of Bacterial Infection from House-Fly. R. M. Buchanan.
11 Two Cases of Paratyphoid Bacillus Infection Treated with Vaccine. W. M. Crofton.
12 Action of Asbestos on Certain Physiologic Substances. M. Coplans and W. G. Lloyd.
13 Protease-Free Tuberculin. W. C. Lyons.

1. **Treatment of Syphilis in Early Stages.**—The authors sum up their views as follows: 1. Commence treatment in the early primary stage whenever possible. 2. Destroy the primary sore whenever possible and insist on the patient receiving not less than three salvarsan and ten mercurial injections. 3. On no account neglect subsequent observation, and prescribe a definite course which is just as strenuous as in the first instance if the patient shows the least sign, clinical or Wassermann, that his disease has not been eradicated. 4. Be cautious about pronouncing a patient cured in any case, but certainly do not do so till he has continued free from all signs, clinical or Wassermann, for at least a year after suspension of treatment in primary cases, and two years in secondary cases.

8. **Hyperthyroidism.**—Eleven cats were fed by Farrant on thyroid powder, a 2½ per cent. solution of purified thyroid, previously digested thyroid, and previously boiled thyroid. The doses given were from 1 to 3 grams per day. The effect of the thyroid feeding produced but little change during the first three days. On about the fourth day the animals became suddenly weak and went off their legs; this stage of weakness passed off in about forty-eight hours, but then toxic symptoms set in and slowly progressed until the animals became moribund. Some of the cats appeared for a time to come to a standstill, but they eventually succumbed.

In four the feeding was stopped when they became moribund, as they were required for other purposes. The hairs came out and the fur became unkempt; when the animals died the fur was very thin. There was a gradual loss of body weight from 28 to 53 per cent. Muscular weakness corresponded to the loss of weight. In two cats in which the thyroid feeding was stopped and which were allowed to recover, a steady increase of weight followed. Salivation took place during the later stages of the experiments; its intensity varied with different cats; at the last it was represented by

a thick ropy mass hanging from the mouth. The appetite was much increased though occasionally they would refuse all food for two or three days at a time. Diarrhea constantly occurred even in the cat subjected to subcutaneous injections. The urine reduced Fehling in some of the cats, but not in others. The daily records made with the polygraph showed that the pulse-rate steadily increased. The highest was 384. The heart's impulse appeared to be diffused over a larger area of the thorax than previously. The rates steadily diminished in the two cats in which the thyroid feeding was stopped. There was no prominence of the eye that could be compared to that seen in exophthalmic goiter. The cats became tremulous, and the hair could be seen to shake, but it was quite impossible to differentiate this from the effects of the general weakness and rapidity of the heart's action. It cannot be compared to the tremor of exophthalmic goiter. The cats during the experiments became quite tame, and purred on being handled; in the later stages they appeared to start at a sudden noise.

At the necropsy there was almost entire absence of fat; the muscles were extremely wasted. The intestinal mucous membrane showed hemorrhagic changes, but not invariably. The intestinal contents were conspicuous by the absence of worms, which are generally present in large numbers in normal cats. The mesenteric lymph-nodes were sometimes enlarged, but not more so than is commonly seen in cats, so that no comparison can be made with the lymphoid changes seen in exophthalmic goiter.

Nineteen rabbits were fed on thyroid in milk in doses varying from 0.2 to 1 gram daily. They rapidly lost weight and died, except five in which the experiments were not pushed to their termination. Death occurred from the fifth to the nineteenth day with one exception; this one survived twenty-eight days. The fur became unkempt and fell out. The loss of weight varied from 19 to 42 per cent. of their total body weight. The appetite was much increased, and they ate ravenously right up to the time of their death. Diarrhea was a constant symptom, but no salivation was noted. The urine was not tested or estimated. The pulse-rate steadily increased, the highest recorded being 420 per minute. No exophthalmos or constant alteration in the nictitating membrane was noticed. The rabbits became weak and tremulous, but no comparison can be made between this and the tremor of exophthalmic goiter. Three of the five rabbits in which the experiment was not pushed to a termination died suddenly while being given ether as an anesthetic.

Fifteen guinea-pigs were fed on thyroid daily, from 0.2 to 0.6 gram. The fur changes, loss of weight, diarrhea and increased appetite that occurred agreed with the changes seen in the rabbit; the naked eye pathology was also similar.

Twelve dormice were fed on 0.025 gram of thyroid a day, twelve others were used as controls. Beyond falling out of the fur, diarrhea and loss of weight, no changes were to be noted. They died in four to nine days, having lost 13 to 38 per cent. of their weight. The thymus was found diminished; in some at the time of death it was quite small, and no fat was to be seen in it, while others died before all the fat had disappeared.

The cats proved the most resistant, the other three were very susceptible; the rabbits lived longer than the guinea-pigs; this one would expect from their size. The cardinal symptoms in all were fur changes, loss of weight, weakness, increased appetite and diarrhea. Tachycardia was well marked in the cats and rabbits, but no reliable observations could be made in either the guinea-pigs or the dormice, owing to the difficulties involved in their small size.

Lancet, London

November 22, II, No. 4708, pp. 1443-1516

14 Origin and Growth of Royal College of Surgeons of England. R. J. Godlee.
15 *Some Requirements for Modern Clinical Teaching. D. Duckworth.
16 Treatment of Neurasthenia. J. S. R. Russell.
17 *Four Cases of Ureteral Calculus. H. Collinson.
18 *Primary Cause of Rheumatoid Arthritis. H. W. Crowe.
19 Case of Tumor of Pituitary Body. A. L. Taylor.

15. **Requirements for Clinical Teaching.**—A clinical teacher, says Duckworth, has great responsibilities. Before all things he must be human and sympathetic, never forgetting that he is dealing with patients who have souls as well as bodies, and not with mere "cases." He has to illustrate and teach good manners as well as medicine. He must believe in his art, for a sceptic in therapeutics can teach nothing. He should not pursue many novelties, for in Duckworth's experience novelty-hunters have not been well instructed in the principles of medicine in their early career. To these requirements Duckworth adds a large measure of tact and common sense, no small amount of geniality and humility, and a due degree of such dignity as rightly belongs to men charged with serious duties to their country and their fellow creatures.

17. **Four Cases of Ureteral Calculus.**—The cases cited by Collinson are as follows: 1. Calculus impacted in the upper end of the ureter; calculous anuria; nephrotomy. 2. Calculous cast occupying the whole length of the ureter; nephrectomy and ureterectomy. 3. Calculus impacted in the iliac portion of the ureter. 4. Calculus impacted in the juxtavesical portion of the ureter; retroperitoneal ureterotomy.

18. **Primary Cause of Rheumatoid Arthritis.**—Crowe describes rheumatoid arthritis as a disease caused primarily by a common inhabitant of the skin, the *Micrococcus epidermidis*, variety deformans, or more shortly, the *Micrococcus deformans*, and suggests that the germ produces the disorder mainly by its action on some portion of the nervous system, and that other pathogenic germs are frequently actively engaged as a secondary mixed infection.

In 26 cases of typical rheumatoid arthritis the organism was present in all. It was cultured in 22 and positive complement-fixation was demonstrated in the remaining 4. In a further 14 less severe and doubtful cases of rheumatoid arthritis, the organism occurred in 11, being cultured from 9. If neuritis is included the total number of cases becomes 48, and the incidence 45—that is to say, 93.75 per cent. Streptococci were present in addition to the *M. deformans* in 21 cases and *B. coli* in 7. Crowe has found the *M. deformans* in the urine in two or three cases of mild septicemia, occasionally in neurasthenia, and also in rheumatism; among 35 of such cases recently investigated it has appeared 13 times.

Annales de Médecine et Chirurgie Infantiles, Paris

November 15, XVII, No. 22, pp. 741-776

20 *Obesity in Children. (Le syndrome adiposo-génital de l'enfant.) G. Mouriquand. Commenced in No. 21. (Les obésités glandulaires de l'enfant.) M. Nathan.

20. Summarized in the Paris letter, November 8, p. 1730.

Bulletin de l'Académie de Médecine, Paris

November 4, LXXVII, No. 34, pp. 325-346

21 Electric Tests of the Internal Ear. (Désorientation et déséquilibration provoqués par le courant voltaïque.) J. Babinski
22 *Action of Salt, Etc., on Calomel. (Etude expérimentale de l'action des chlorures alcalins sur le calomel, in vitro et dans le tube digestif.) G. Patein.

22. Summarized in the Paris letter, November 29, p. 1995.

Presse Médicale, Paris

November 8, XXI, No. 91, pp. 905-916

23 *Cure of Experimental Tetanus in Guinea-Pigs. M. A. Ruffer and M. Crendiropoulo.
24 Conditional Reflexes. (Les réflexes associatifs.) I. Duscian.

November 12, No. 92, pp. 917-928

25 Intestinal Bacteria and Auto-Intoxication. H. Roger.
26 *Local Prophylactic Treatment of Furunculosis. F. Gallois.

23. **Cure of Experimental Tetanus.**—Ruffer and Crendiropoulo started a series of experiments to determine the reason why certain serums and antitoxins, while having a preventive action against the microbe in question, have no therapeutic action after symptoms due to the microbe have developed. They are experimenting with tetanus germs and serum and their work to date has already demonstrated, they say, that different substances develop in the muscles of tetanized animals some of which favor the effects of the tetanus toxin while others check the toxic action. Antitetanus serum is

incomplete; it lacks something to render it truly effectual and this lacking substance, they assert, can be procured from the muscles of tetanized animals. Guinea-pigs treated on this principle recovered from the experimental tetanus.

26. **Prophylactic Treatment of Furunculosis.**—Gallois denounces the use of water when there are pimples and boils, saying that moist dressings maintain and perpetuate the infectious process. He scrubs the region with soap as this has an antiseptic action while it removes the old epidermis in which germs are lurking, and opens up the clogged outlets to the glands in the skin. Then he rinses the region with an antiseptic, phenol 1 to 40, or hydrogen dioxid, and with blunt scissors snips the top of all the pustules and pimples and cauterizes the bottom of the little ulcer with a mixture of 2 gm. metallic iodin in 5 gm. acetone, applied on a toothpick swab. He is very careful not to squeeze any pimples or pustule, and he never lets his fingers touch the skin or, if he does, he sterilizes them anew before proceeding. He uses a square of lint or cotton to cover the region, spreading first on the cotton a thick layer of glycerite of starch with 10 per cent. boric acid. The dressing is renewed once or twice a day. The glycerin dehydrates the region and is thus practically a dry dressing. With this treatment the tendency to formation of furuncles dies out and by the end of a week or two the cure is complete. The last stage of the treatment consists in dusting the region with a dry powder, 20 parts talcum with 2 parts each of bismuth and paraffin; the latter makes the powder stick to the skin better. The patient is warned not to wear the clothes he wore before the treatment began, and the edges of collars, etc., are softened to prevent irritation of the skin liable to bring on new trouble. The treatment is thus a series of minute precautions bearing all toward the same goal—to prevent reinfection. Gallois insists on applying the dressing himself each time. Vaccination and internal measures may be useful, but they must not divert the attention from the main point in treatment, the local prophylaxis.

Revue de Gynécologie, Paris

November, XXI, No. 5, pp. 353-448

27 The Transverse Abdominal Incision in Gynecology. O. J. Rapin.
28 *Treatment of Retrodisplacement of Uterus by Transplanting the Round Ligaments. J. M. Caballero.

28. **Treatment of Retrodisplacement of the Uterus.**—The tip of the kinked round ligament is sutured to the fascia of the rectus after being brought up through a tunnel parallel with the farther end of each tube. By this means the ligaments form a long flat ellipse instead of the narrow triangle of other technics. Caballero has applied this technic in 350 cases and extols its numerous advantages. The uterus is left freely movable and there is no disturbance with a later pregnancy. The direction of the uterus in respect to the axis of the pelvis is not altered.

Semaine Médicale, Paris

November 12, XXXIII, No. 46, pp. 541-552

29 *Spasmodic Contraction of the Stomach. (Le gastrospasme.) L. Cheinisse.

November 19, No. 47, pp. 553-564

30 *Living Craniopagus. (Emi-Lisa Stoll.) M. Baudouin.

29. **Spasmodic Contraction of the Stomach.**—Cheinisse concludes his study of gastrospasm with the statement that atropin aids in differentiation; roentgenoscopy shows the spasm relaxing under the influence of the drug while the nausea and vomiting subside. It is useful consequently in treatment, and Cheinisse has found its action enhanced by giving cannabis indica with it. The cause should be treated, of course, trying to cure the neurasthenia or other nervous affection responsible for the gastrospasm. If tobacco has to be given up, the weaning should be gradual. Waldvogel has reported a case in which on the sudden dropping of tobacco the gastrospasm was succeeded by atony of the stomach with much residue, and the condition persisted for several weeks.

30. **Living Craniopagus.**—Baudouin describes with an illustration a craniopagus twenty months old when exhibited at Ghent last summer. The twins are normally formed except where they are joined by the skull, the parietal bones blending together. An interesting feature of the case is the angle of 90 degrees at which the planes of the heads are turned. The brains seem to be distinct, as one of the twins can sleep while the other is awake. As invariably occurs with double monsters of this kind, Baudouin remarks, the twins are of the same sex and the color of eyes, hair, shape of ears, etc., are the same in each; they are not two beings but halves of one. He has found seven cases on record of a craniopagus surviving for a few days. Five date from 1703 to 1861. The others are L. Blanc's case (1893), girls, who survived for five months, and Kissinger's case (1908), boys, who died the sixth day after birth.

No attempt at operating on a craniopagus is on record, but Munster's (1495) famous metopagus (joined at the forehead) lived to be 10 years old, when one of the girls died and the other did not long survive the separation. Baudouin emphasizes the necessity for operating before the death of either child. This is the capital condition for success, and the Stoll craniopagus should be operated on before the legs become atrophied from lack of use. The law in France forbids a surgeon, however willing to pay the subject, from even proposing any operation whatever for the simple purpose of promoting the progress of operative science.

Beiträge zur Klinik der Tuberkulose, Würzburg

XXVIII, No. 3, pp. 351-512. Last indexed. Nov. 8, p. 1755

31 *Rare Forms of Tuberculosis. (Die menschliche Tuberkulose in ihren selteneren Erscheinungsarten.) G. Goerdeler.
32 Diagnostic Importance of Inoculation of Animals with Pleuritic Effusion. F. Japhé.
33 *Air Embolism in the Eye. (Luftembolie im Auge.) Stargardt.
34 *Abderhalden's Serodiagnosis in Tuberculosis. (Untersuchungen mit dem Abderhaldenschen Dialysierverfahren bei Tuberkulösen.) F. Jessen.

31. **Rare Forms of Tuberculosis.**—Goerdeler reports seventy-two cases or necropsies showing a tuberculous affection in some unusual location, as he describes in detail in this article of 114 pages. In nine cases the lesion was in the lower or middle lobe of the lung in persons between 60 and 80 and in one infant. He has found only one case on record of a similar atypical tuberculous lesion in an infant's lung. In two other cases the tuberculous process was located in the gums; in five in the esophagus. Another patient was a boy with a tuberculous abscess in the parotid gland. In another case a woman of 29 had a lupus carcinoma in the right cheek and tuberculous tissue was found adjoining it. The cadaver of a man of 56 showed a perforated gastric ulcer with healed lesions in the lung. Among the 4,620 cadavers, tuberculous gastric ulceration was found in only two other cases and in both it was evidently secondary to pulmonary lesions. In only six cases in his total material was a primary intestinal tuberculous lesion discovered.

The liver was the seat of the tuberculous process in three cases; in one this was apparently the primary process. A tuberculous abscess was found in both liver and pancreas in another case, the patient a man of 74. There were no striking symptoms in this case and no fever, all the liver cases showing that tuberculous processes in this organ may develop without characteristic symptoms. In three cases the male urogenital apparatus seemed to be primarily affected, no older lesion being discovered at necropsy. The uterus was the seat of an isolated tuberculous process in a woman of 68; the symptoms suggested cancer. He encountered only one other case of primary tuberculosis of the uterus; the tubes are generally affected first. In the group of thirteen cases of tuberculous processes in the serous membranes, the patients were nearly all elderly; the possibility of a tuberculous affection should be borne in mind in case of effusion in a cavity in the elderly. An abnormal temperature curve should suggest that the disturbances cannot be ascribed to mere senile insufficiency of the cardiovascular apparatus. The adrenals were the seat of a tuberculous process in three cases, and none of them showed any signs of changes in the skin and mucosa suggesting Addison's disease, confirming anew the looseness of the connection between this and adrenal tuberculosis.

The thyroid was the seat of the tuberculous process in one case; the gland increased rapidly in size, suggesting malignant struma. The patient was a well-nourished woman of 42 and the thyroid was removed, the patient dying the next day. The first symptoms had been observed five months before, but the woman had kept at work until three days before the operation. Necropsy was not permitted. The spinal dura was the seat of a circumscribed tuberculous process found at necropsy of a man of 66. Nothing in the clinical course had suggested the true nature of the disturbances noted; they consisted merely of atrophy of the muscles in the legs, some disturbance in micturition and defecation, and in the gait. The temperature had shown slight evening rises for a few weeks, which should have suggested a possible tuberculous process. A connection between trauma and tuberculosis was evident in a few cases of a tuberculous process in bone or muscle in elderly men or women. Goerdeler calls attention to the fact that in these seventy-two cases of atypical localizations of tuberculosis all but four were in adults, and in over half the cases in persons over 60. With isolated tuberculosis of lymph-nodes, cancer had accompanied or preceded it in six cases. One lesson taught from the experiences reported is the diagnostic importance of even a slight rise in temperature, especially at evening. The various modes of spread of the infection are discussed and a few pages of bibliography appended.

33. **Air Embolism in the Eye.**—Stargardt induced air embolism in rabbits and monkeys and found that the fundus of the eye showed the presence of air in the artery almost at once. The characteristic findings are described, and examination of the fundus is suggested as a means for differentiating air embolism in puzzling cases of collapse.

34. **The Abderhalden Serum Test in Tuberculosis.**—Jessen states that the dialysis method of Abderhalden is uncommonly instructive in tuberculosis, not only differentiating the tuberculosis but pointing out the special organ involved. He tabulates the findings in 381 applications of the test.

Berliner klinische Wochenschrift

November 10, L, No. 45, pp. 2073-2120

35 *Friedmann's Method of Treating Tuberculosis. (Ueber das Dr. F. F. Friedmann'sche Heil- und Schutzmittel zur Behandlung der Tuberkulose und Scrofulose.) C. L. Schleich and others.
36 *Vaccination against Chicken-Pox. (Schutzimpfung gegen Varicellen.) C. A. Kling.
37 *Action of Hypophysis Extract on the Kidneys. (Nierenwirkung von Hypophysenextrakten beim Menschen.) R. von den Velden.
38 *Vaginal Versus Abdominal Hysterectomy for Uterine Cancer. D. v. Ott.
39 *Diseases Accompanied by Exaggerated Hemolysis. (Pigmentcirrhose; Milzexstirpation bei perniciös-hämolytischer Anämie.) M. Mosse.
40 Operations on Thoracic Esophagus. E. Unger.
41 Technic for Intubation with Meltzer's Insufflation Anesthesia. A. Lautenschläger.
42 Artificial Respiration during Operations in the Thorax. (Künstliche Atmung bei intrathorakalen Eingriffen.) Gelinsky.
43 Production of Radio-Activity by Non-Radio-Active Elements. H. M. Levy-Dorn.

35. **The Friedmann Method.**—[This article consists of clinical talks delivered at a meeting in the auditorium of the Second Medical Clinic in Berlin on Oct. 26, 1913, for the demonstration of results obtained with the Friedmann tuberculosis remedy. It will be noted that this was a Friedmann meeting, at which there was no critical discussion and no representation of opposing views.]

Schleich gives Friedmann the credit for discovering a harmless and not infective form of the tubercle bacillus which is derived from the turtle and is said to have a curative action against human tuberculosis. Living bacilli are injected, producing at the point of injection an infiltration which is assumed to be a depot from which antigens are slowly supplied to the circulation. In certain cases the living bacilli are injected intravenously directly into the blood. Schleich presented ten cases of surgical tuberculosis and two of pulmonary tuberculosis which had improved greatly under the treatment. Two were cases of tuberculous testicle, one of which Professor Moeller is said to have declared could not be cured by tuberculin. He showed one case of florid phthisis together with suppurating cervical glands and an affection of the hip in which complete recovery had taken place. This patient had been treated for four years, showing the complete harmlessness of the remedy. The other cases were mostly examples of healed tuberculosis of the joints and bones in which the Friedmann remedy had been used.

Two cases of pulmonary tuberculosis were presented. The condition of the first on admission was shown by a roentgenogram, indicating, according to Schleich's interpretation, a complete destruction of one lung and extensive infiltration of the other. The patient was present in person and Schleich stated that she was really much better. The second patient was allowed to tell his own story. He reported remarkable improvement in spite of the extremely unfavorable prognosis which had been made by the physician who had treated him.

E. Müller presented eighteen cases selected so as to show the action of the remedy best. He is not inclined to modify the favorable opinion which he expressed in November, 1912. If the indications given by Friedmann are strictly adhered to, the remedy, in his opinion, will be found to be not only harmless, but very beneficial.

H. Thalheim summarized his experience in the following propositions: 1. Under all circumstances I secure with Friedmann's remedy a cessation of the toxic activity of the bacilli and of the specific symptoms. 2. I secure an early improvement in objective signs, especially an abatement of the râles, while the bronchitic and peribronchitic symptoms may not cease, as generally all cicatricial processes which pertain to healing even in favorable cases cause the persistence of auscultatory and percussory signs. 3. I secure a complete transformation of the constitution in the sense of full immunity, i. e., a restoration of the ability to work and complete feeling of health, such as no treatment hitherto has so permanently and so surely produced. 4. Previous treatment with tuberculin in many cases renders a cure more difficult. 5. Under all circumstances I regard increase of weight (without extra feeding), a permanent subjective feeling of well-being and ability to work as of more importance than the remains of a previously active focus as determined by auscultation and percussion.

Thalheim lays special stress on the importance of not making a second injection until the infiltration produced by the first has disappeared. He reports seventeen cases.

Immelmann discussed the evidence of tuberculosis of bones and of the lungs given by the x-ray plate, and showed what he believed to be evidences of improvement in the cases treated by Friedmann's remedy.

F. Kraus remarked that the clinic was acting in the capacity of a neutral host and had no patients to show, as those who had been treated by the remedy were not yet ready for conclusions to be drawn. He referred to one case which had been presented and which he had regarded as affording no prospect of success for the Friedmann remedy. The improvement he regarded as surprising, even when it was admitted that the patient was a very impressionable man. (The patient was the one that Schleich allowed to tell his own history.)

While admitting that these results may be obtained by other methods, Kraus believes that the method gives results better than he has seen obtained by tuberculin, and he regards it as preferable on account of its simplicity. He recommends that it be tested at leisure without prejudice.

36. **Vaccination against Varicella.**—Kling protests against the assumption that chicken-pox is always a harmless disease. When it runs through an institution with many small children, it is liable to develop into a malignant form. It may leave disfiguring scars and sepsis or erysipelas may originate in the pustules, while instances are known of consecutive pneumonia, nephritis, gangrene of the skin and other complications. At the Stockholm Children's Hospital an epidemic of varicella developed last August; forty-four patients were affected and in order to save the rest he inoculated the other

infants with serum from a pustule. A positive response was obtained in fifty-eight of the children and the virus could be cultivated through six generations. Only one of the thirty-one vaccinated infants in two wards developed the disease, and it ran an unusually mild course, while over two-thirds of the non-vaccinated had typical varicella. There are 200 children in all the wards of the institution. The response to the vaccination was slight and exclusively local. A number of the children giving a positive reaction had been vaccinated against small-pox up to a few months before. The typical reaction to both seems to sustain the assumption of the essential difference between variola and varicella.

37. **Action of Hypophysis Extracts on the Kidneys.**—The experimental and clinical research reported by von den Velden shows that extracts of the pituitary body depress kidney functioning. This effect warns of the necessity for caution with this form of organotherapy. It also explains the benefit from it in diabetes insipidus.

38. See abstract 57 in THE JOURNAL, 1913, lxi, 1752.

39. **Splenectomy in Pernicious Anemia.**—Mosse adds another case to Eppinger's in which the clinical picture of pernicious anemia was transformed by removal of the spleen. (See THE JOURNAL, Oct. 4, 1913, p. 1333; Nov. 15, p. 1816, and Dec. 6, p. 2087.) Of course this treatment is applicable only in cases of pernicious anemia with much hemolysis. The extent of the blood destruction can generally be determined by testing the resisting power of the red corpuscles to salt solution and to the patient's serum and alien serum. Mosse's patient was a woman of 38 and the great benefit following splenectomy has persisted unmodified to date.

Deutsches Archiv für klinische Medizin

CXII, Nos. 3-4, pp. 209-402. Last indexed Nov. 15, p. 1851

44 *Blood-Pressure in Alcoholism and Functional Neuroses Free from Circulatory Disturbance. K. Raff.
45 Chemistry of the Sputum. E. Maliwa.
46 *Effect of Pathologic Serums and the Serum of Pregnancy on Autolysis. (Ueber Förderung autolytischer Enzymwirkung durch pathologisches und Schwangerschaftsserum.) H. Guggenheimer.
47 Pathologic Anatomy of the Heart in Permanent Arhythmia. V. Berger.
48 The Electrocardiagram in Permanent Arhythmia. K. Fahrenkamp.
49 *Retention of Chlorin. B. Scholz and A. Hinkel.
50 Case of Traumatic Thrombosis. S. Daus.
51 No constant Relation between Deficiency in Hydrochloric Acid and Excessive Splitting of the Albumin Molecule. (Ist bei Salzsäuredefizit das Eiweiss bes. weitgehend aufgespalten?) L. Pel.
52 *Salkowski-Kojo's Colloidal Nitrogen in the Urine in Diagnosis. G. Lehmann.

44. **Blood-Pressure in Alcoholism, Etc.**—The tests were made in chronic alcoholics with normal heart and kidneys after abstinence had been enforced in the hospital. There was a marked rise in the systolic pressure for a few days, with a gradual fall. The diastolic pressure was constantly high throughout the whole period, so that the increased pulse pressure was caused only by the rise in the diastolic pressure. This peculiarity in the blood-pressure curve is so constant that it could be used in doubtful cases for diagnostic purposes. In functional neuroses the curves were variable and less characteristic.

46. **Effect on Autolysis of Various Pathologic Sera.**—A series of experiments was undertaken to determine the effect of serum in different diseases on autolysis in various organs. The serums from patients with parasyphilitic disease had no appreciable effect on human brain tissue; on the other hand, the serum from patients in certain stages of pneumonia and serum from uremic patients decidedly increased autolysis. Autolysis of rabbit liver was increased by serum from pneumonia, uremia, chronic nephritis, Basedow's disease, the absorption stage of serous joint effusions, diabetic coma and beginning delirium tremens. This effect was not constant, however. It seems that it can be hindered under certain circumstances by anti-autolytic substances in the serum.

This increase in autolysis cannot be attributed either to a decrease in alkalinity of the blood or to drugs, nor to a decrease of the complement or antibodies in the blood. The substances in the serum responsible for it are called auxo-autolytic bodies. They are probably of the nature of ferments. If this proves to be the case, we will thereby have a new and more delicate method of demonstrating proteolytic ferments in the blood-serum. The presence of these auxo-autolytic substances in human serum also confirms the assumption that autolytic processes are going on in the body during life. Differences were noted in the effect of the same serum on the autolytic enzymes of different organs, confirming the specific nature of the autolytic enzymes involved. Serum from pregnant women decreased autolysis of rabbit liver but hastened the autolysis in placental tissue. Other normal and pathologic serums were neutral in regard to placental tissue, while inhibiting autolysis in rabbits' livers. No normal or pathologic serum was found that increased autolysis in tumors.

49. **Retention of Chlorids.**—Scholz and Hinkel find that the question of chlorid retention is much more complicated than has hitherto been supposed. Many other conditions besides nephritis influence retention of chlorids, such as congestion, disturbances of nutrition, anemia and cancer. Therefore high chlorid content of the blood should not be attributed to kidney insufficiency until these other possible factors are excluded. They regard the skin as the main storehouse for the chlorids in the body; after this come in turn the intestines, the liver and the lungs.

52. **Determination of Colloidal Nitrogen in Diagnosis.**—Lehmann found that Kojo-Salkowski's quotient, which is assumed to represent the relation of the colloidal nitrogen to the total nitrogen of the urine, is often increased in carcinoma and tuberculosis. The quotient is markedly influenced by diet. With cancer, for instance, by giving a diet poor in purins, the quotient may be decidedly decreased. On the other hand, by giving normal individuals an excess of purin bodies the quotient may be made as high as with cancer. In using it for diagnostic purposes, therefore, the diet must be carefully controlled. (The test was discussed editorially in THE JOURNAL, Sept. 6, 1913, p. 778.)

Deutsche medizinische Wochenschrift, Berlin

November 13, XXXIX, No. 46, pp. 2233-2280

53 *Treatment of Falling Out of the Hair, Hair Anomalies and Excessive Growth of the Hair. (Aerztliche Kosmetik der Haut. IV.) E. Kromayer.
54 Echinococcus Disease of the Lungs. E. Behrenroth.
55 Roentgen Diagnosis of Stenosis of Bronchus. J. Ziegler.
56 The Protecting Antibody Ferments. (Zur Abwehrfermenttheorie.) Rollmann.
57 *Cardiospasm and Hypnosis. L. v. Szöllösy.
58 Dangers of Transfusion and Means to Avoid Them. R. Ottenberg and D. J. Kaliski (New York). See p. 2138.
59 Abortive Treatment of Syphilis. W. Lier.
60 Retrograde Incarceration of the Intestine. W. Merkens.
61 Improved Stain for Blood and Tissues. (Einfache Methode der panoptischen Blut- und Gewebsfärbung mit "Polychrom.") S. Klein.

53. **Care of the Hair and Its Diseases.**—Kromayer reiterates that any means to stimulate the functioning of the hair papilla tends to prevent the dropping out of the hair and promote the production of new hairs. For alopecia areata the best local application seems to be a 1 to 4 per cent. alcoholic solution of mercuric chlorid with which the bald spots are dabbed morning and night. If redness and pain are induced, the application is suspended until this subsides. He regards radiotherapy, however, as far superior to any medicinal applications. The quartz lamp can be applied to induce with the white light an intense inflammation over the bald spot; this is then healed with salves and the application is repeated once. Or the milder blue light can be used daily to keep up a very mild congestion and inflammation. Both forms of radiotherapy with the quartz lamp are very effectual, he says. In not a few cases the hairs began to sprout in a few days after the white light application and by the end of a few weeks there was a normal growth of hair.

Alopecia pityroides is the result of chronic inflammation of the scalp, causing itching and patches of redness and dandruff. The hairs grow fast under this stimulus but gradually the papilla becomes destroyed and permanent baldness results. The baldness thus induced is irreparable but the cure of the

causal inflammation and prevention of the inflammation are important and practicable. The scalp needs light and air to be healthy; the constant wearing of hats and caps, and living in close rooms reduce the resisting power of the region while the accumulation of dust, sweat and sebum provides food for micro-organisms. He insists that the scalp should be cleansed much more regularly than is generally done. Men should shampoo their heads with a non-irritating soap two or three times a week and then apply a 5 per cent. petrolatum solution in ether, rubbing in fifteen or twenty drops on a wad of cotton. For women he advises the use of what he calls the hair *Glittel*, a kind of narrow toothbrush only it has a pad of wool in the place of bristles. A weaker solution of the petrolatum can be used or a mild shampoo, afterward replacing the fat lost in the shampooing. The ends of the hairs suffer most from the loss of fat, and consequently he advises women to tie up the long ends of their hair in three or four rubber tissue bags when the scalp is shampooed. He remarks in conclusion that a convenient method has not yet been discovered for removal of superfluous hairs. Even when five needles are inserted at once for electrolysis it takes a great deal of time and there is liable to be recurrence over more or less of the area in the course of a few months in persons with a tendency to much growth of hair.

57. **Cardiospasm and Hypnosis.**—Szöllösy's patient was a woman of 36, otherwise healthy, and in good circumstances. She had suffered for two years from cardiospasm absolutely rebellious to all medical measures. Asthma developed also and the woman became much emaciated from inability to have the food pass regularly into the stomach, but there were no symptoms of hysteria. An operation confirmed the lack of organic trouble. Atropin gave relief for a few hours at first but the patient gradually became accustomed to it and no further effect was apparent. As a last resort hypnosis was tried, and for five weeks during the hypnosis treatment and for a month afterward there was no further disturbance from the neurosis. Then the symptoms returned again the same as before, persisting until permanent relief was obtained by an operation nearly three years after the first signs of trouble.

Medizinische Klinik, Berlin

November 9, IX, No. 45, pp. 1837-1878

62 *Evacuation of Pleural Effusion with Inlet of Air. A. Schmidt.
63 *Syphilitic Lesions in Internal Organs. Lenzmann.
64 Autoserotherapy and Autohemotherapy. (Methode und Wirkung der Eigenserum- und Eigenblutbehandlung nebst Bemerkungen zur Umstimmung der Hautreaktion durch Eigenstoff- und Natrium-nuclein-Injektionen.) B. Splethoff.
65 *Botulismus; Twelve Cases with Five Deaths. L. Bürger.
66 Serodiagnosis in Progressive Paralysis. M. Theobald.
67 Scaphoid Scapula. F. Warburg.
68 Materia Medica Includes Materia Dietetica as well as Materia Pharmacologica. (Diätetik im ärztlichen Unterricht.) C. Jürgensen.
69 Early Diagnosis of Cancer. C. S. Engel.
70 Petroleum in Treatment of Digestive Disturbances. (Anwendung von Erdöl—Angiers Emulsion—bei Verdauungskrankheiten.) L. Metzger.
71 The Wassermann Reaction. (Zur Frage des verfeinerten Wassermann mit bes. Berücksichtigung der sogenannten paradoxen Sera.) F. Graetz.

62. **Outlet of Pleural Effusion with Inlet of Air.**—Schmidt is not convinced of the therapeutic advantages of letting air into the pleura in pleurisy, although he has seen some surprising benefit follow this in occasional instances; but if it is to be done the technic he describes places it within the reach of every one and absolutely free from drawbacks of any kind. It is important to drain away the effusion to the last traces, and this is accomplished in the simplest and most thorough manner by having the patient lie on his side across a narrow space between two beds. The puncture is made at the lowest point with a simple, not too thick, two-way trocar. Removing the guide starts the flow, and as air enters at the same time no aspiration is necessary and there is no need to measure the amount of air; only just enough enters to take the place of the emerging fluid. The conditions in regard to pressure between the outer air and the air in the chest adjust themselves automatically. He has determined with the Roentgen rays that with this technic the fluid drains away to the last drop and no more air enters than takes the place of the fluid. He describes two cases in detail with the Roentgen findings before and after to sustain his assertions.

63. **Syphilitic Disease in Internal Organs.**—Lenzmann's experience teaches that the absence of signs of syphilis by no means excludes the possibility of a syphilitic origin for disturbances observed. The sad "too late" is particularly tragic here as proper treatment in time might have warded them off. He opens the list with two cases of what was apparently cancer of the liver in women nearly 60, free from any suspicion of syphilis, but with cachexia, pallor, emaciation and the liver extending two or three inches below the costal arch, hard and knobby, painful on pressure, but not otherwise, since the first beginning of trouble six months before. Both women had healthy children but each had had two abortions years before. The Wassermann was found positive and under treatment for syphilis a complete clinical cure was realized in a few weeks in both cases. In contrast to these, in a third case, in a known syphilitic woman, an affection of the liver developed which was not influenced by treatment and necropsy showed cancer. The whites numbered 20,150 in this case while in the two others in which the syphilis was responsible for the trouble, the whites numbered about 7,200. Loss of appetite and oppression in the stomach often accompany recent syphilis; there is probably a catarrhal disposition on the part of the gastric mucosa. He has often witnessed later in the course of the disease severe stomach disturbances, vomiting after meals and gastralgia at night, all of which subsided entirely on treatment of the syphilis. This also occurred in a case suggesting ulcer by the occult bleeding and gastralgia.

One patient with symptoms of obstruction in the intestines for several months finally developed complete ileus and died. Syphilis was not suspected in this case but necropsy revealed gummatous tumors as probably responsible for the entire intestinal trouble. Another patient with signs of syphilis had colics and obstinate diarrhea not influenced by the usual means but subsiding under treatment of the syphilis; the gummatous infiltration of the mucosa had not reached the stage of ulceration. Two other patients had oliguria, high albumin content of the urine, edema, extreme pallor, and they felt very sick, but were restored by treatment for syphilis.

One patient consulted him for obstinate headache and sleeplessness and the urine contained some albumin and casts with a blood-pressure of 150 to 158. These signs of a kidney affection had developed fifteen years after infection with syphilis. Treatment for the syphilis then seemed to arrest the kidney trouble; enough sound kidney tissue was saved so that although there is now, sixteen years later, still 0.5 per thousand albumin in the urine, there are no casts and the patient feels well and strong. In another case with a blood-pressure of 170, normal conditions were restored by specific treatment. Syphilitic disease of the arteries may cause symptoms in time to permit complete retrogression if they are carefully heeded. Sudden loss of consciousness may be the first sign of trouble in the cerebral arteries; he has had three cases of this kind. One was a man of 62 who noticed that he could not rely on his memory and felt depressed; after a few months he suddenly dropped unconscious and lay in this state for three days. The assumption of cerebral apoplexy was disproved by the fact that no paralysis was left from the attack and treatment for the syphilis restored him to apparently complete health as occurred also in two other cases of this kind; the loss of consciousness had lasted only a few hours.

All these experiences emphasize the importance of energetic treatment of the syphilis whenever the Wassermann becomes positive; also that syphilitic patients should be kept under observation for years. He urges the Wassermann test even when there is no history of syphilis but merely headache at night, pain in the heart or other suspicious symptoms. Few syphilitics will take the pains to get cured. They may go to some physician who will reassure them and say "wait for further treatment until you have symptoms." This pleases the patients, and as long as this lack of sense on the part of the public is nourished by the words of certain medical

men the prospects of eradicating syphilis and its tragic consequences are not very bright.

65. **Botulismus.**—Bürger reports twelve cases of meat-poisoning following the eating of ham and sausage from one pig. The physicians who saw the first cases diagnosed diphtheria on account of the redness of the throat, the disturbances in swallowing and a coating in the throat resembling that of diphtheria. This mistake is the more liable because diphtheria toxin may cause injury of the nervous system exactly like that of botulism toxin, but in case of diphtheria injection of a guinea-pig with serum from the patient will cause the adrenals to swell, with a tendency to hemorrhages in the tissues and effusion in the pleura, while in case of meat poisoning there is the characteristic paralysis of the extremities, intestines, bladder, etc. In mild cases of botulismus the muscles of accommodation may be paralyzed but with pronounced poisoning there is also paralysis of the iris. With poisoning from atropin or other plant alkaloids, the nervous symptoms develop much more rapidly than in botulismus, and there may be delirium or unconsciousness; these are not observed with botulismus, while methyl-alcohol poisoning does not show the paralysis characteristic of botulismus.

The treatment of botulismus must be different from that of ordinary meat-poisoning with gastro-intestinal symptoms. On account of the paralysis of stomach and bowels, purgatives and emetics have no effect and merely add to the intoxication as they lie passively in the stomach. The sausage or other substance responsible for the poisoning lies in the stomach indefinitely and consequently repeated rinsing out of the stomach is indispensable even when days have elapsed before the true nature of the disturbances is suspected; lavage may save the patient's life at any stage. Serotherapy is also important, and an antibotulismus serum is on the mafket, but Kobs has recently reported experiments on guinea-pigs in which ordinary diphtheria antitoxin neutralized the toxic action of botulismus poison. If this experience is confirmed in the clinic a new aid in treatment will be afforded, easier of access than the specific antitoxin. Other measures that may prove useful are venesection, saline infusion, high rectal injections, massage and faradization of the abdomen, inhalation of oxygen and artificial respiration. Necropsy has frequently revealed aspiration pneumonia in the cadavers of botulismus patients, and hence no feeding by the mouth should be allowed.

Münchener medizinische Wochenschrift

November 11, LX, No. 45, pp. 2497-2552

72 *The Prognosis in Heart and Vascular Disease. (Muss die Prognose der Herz- und Gefässerkrankungen auf dem toten Punkte bleiben?) K. Grassmann.
73 *Abderhalden Serodiagnosis in Scarlet Fever. W. Schultz and L. R. Grote.
74 Agonal Appearance in the Blood of Proteolytic Ferments. (Auftreten eiweissspaltender Fermente im Blut während der prämortalen Stickstoffsteigerung.) F. N. Schulz.
75 Experiences with Neosalvarsan. R. Frühwald.
76 *Diagnostic Importance of Topographic Palpation of the Psoas and Local Tenderness. T. Hausmann.
77 Connection of Dreams with Preceding Events. (Träume mit auf der Hand liegender Deutung.) E. Bleuler.
78 Diathermia in Otology. (Otothermie.) M. Weiser and H. Gerlach.
79 *Alcohol and Crime in Bavaria. H. v. Hentig.
80 *The Colleague. (Die Hohe Schule für Aerzte und Kranke. X.) M. Nassauer.

72. **Prognosis in Heart and Vascular Disease.**—Grassmann presents some statistics which show that the number of persons who die from cardiovascular disease is increasing year by year, while the mortality from cancer and tuberculosis is constantly diminishing. He asks why nothing is being done to reduce this frightful mortality from cardiovascular disease. All our patients with dropsy from cardiac trouble die, and the interval is not long; they die as inevitably, it seems, as those with unoperated cancer. The prevailing pessimism in respect to cardiovascular disease is like that which prevailed in regard to tuberculosis not so many years ago, and he thinks that the outlook will grow brighter in time. There is no doubt that preventive measures can be found that will prove effectual in some forms of cardiovascular disease, especially chronic, inflammatory or degenerative myocarditis or hypertrophy of the heart, toxic influences, thyroid intoxication, syphilitic affections of heart and vessels, injury of the heart from athletics, from overeating, undereating, anemia, and, to a certain extent, arteriosclerosis. Some of these factors are more or less under our control, and we must aim to detect the tendency to cardiovascular disease while it is still in the stage corresponding to the apical process in pulmonary tuberculosis or even before this. The public must be taught the importance of the early diagnosis of cardiovascular disease, just as it is learning the importance of this in tuberculosis and cancer. Grassmann insists that the heart should be systematically examined at intervals just as much as the teeth. He pleads for the establishment of institutes for research on the heart, like the cancer research institutions, and means to give the heart and vessels a chance to recuperate, like the great system at the disposal now of the insured working-man with incipient tuberculosis. Statistics show the pressing need for checking the increasing mortality from cardiovascular disease, and he declares that this is a social and economic public matter calling for a systematic campaign on a large scale.

73. **Serodiagnosis in Scarlet Fever.**—Twenty-seven children with scarlet fever and thirteen controls were tested by the dialysis technic for specific ferments in their serum. With three exceptions, the serum of all the scarlet fever children digested lymph-node tissue when the test was applied between the fifth and thirty-second day of the disease, but none before or after these dates. Positive findings were also obtained in seven of the controls, namely, in a case of hebephrenia, of endometritis, of polyp in the ear, or of acute or chronic polyarthritis, and in two pregnant women. The digestion proceeded the same whether the lymph-node tissue had been derived from a scarlet fever patient or not.

76. **Palpation of the Psoas.**—Further experience with Hausmann's method of deep and sliding palpation has amply confirmed its reliability and instructiveness, he reiterates. He palpates from the front the rear abdominal wall, not using force, but insinuatingly working the finger in—always during expiration alone, working rhythmically as the patient expels his breath and stopping during inspiration. The method is peculiarly useful for palpation of the psoas; the muscle is rendered more prominent by the patient's raising his extended leg. The psoas then forms a firm background on which the intestines above it can be instructively palpated, sliding the finger lengthwise of the psoas, over the intestine. He describes in detail the special findings with different segments of the bowel and calls attention in particular to the information to be obtained from tenderness at any point in the psoas. In normal conditions, pressure does not elicit pain; with a visceral neurosis the psoas may be tender throughout and on both sides. Tenderness at any one point is a sign of organic disease somewhere causing irritation of the nerves or lymphatics crossing the psoas at this point. This is almost constant with chronic appendicitis. He ascribes the pain at McBurney's point to the psoas rather than to the appendix.

Tenderness in the lower psoas may accompany disease in the ovaries or tubes or retroflexion of the uterus, just as McBurney's point may be tender with these. In one of his cases of retroflexion, the pain in the psoas disappeared at once when the uterus was lifted by a pessary. Abnormal conditions in a kidney or ureter are liable to induce the psoas pain; not only the lower part but also and predominantly the upper and middle portions are tender. Discovery of the high psoas pain should direct attention to the upper urinary apparatus. Inquiry should be made as to disturbances in micturition at the time or previously, and the lumbar region should be tapped, not pressed, to elicit local pain, tapping with the ulnar side of the hand along the latissimus. Pain will radiate forward in case of a local affection. The normal will feel no pain and if there is hyperesthesia pain will be felt on both sides; it is possible, however, for kidney or ureter disease to be bilateral. There may be pain on pressure of the sacrolumbar muscle, just below the twelfth rib. The urine must be carefully examined for albumin and sediment. Sometimes with no albuminuria a few red corpuscles may be found in the urine sediment. This triad: psoas pain, pain on concus-

sion (*Sukkussionsschmerz*) and red corpuscles in the urine sediment, is a certain sign of disease in the upper urinary apparatus. In a recent case he diagnosed disease of the kidney pelvis merely on the basis of pain under the left costal arch, lumbar concussion pains and a very few, much altered red corpuscles in the urine. Under treatment for pyelitis the pains subsided but after the patient was up and about there was sudden hematuria from the kidney involved, confirming the presumptive diagnosis.

The importance of palpation of the psoas and proper interpretation of tenderness at any point in it, is emphasized by various instances related. Hausmann is convinced that proper heeding of the psoas tenderness would do away with many erroneous diagnoses of appendicitis, and would enable actual kidney and genital disease to be discovered in their incipiency. His experience explains the persistence of disturbances after an appendicectomy; the trouble was not in the appendix at all, and the apparent benefit from the operation is due to the deadening of the sensation of pain which follows any general anesthesia, to the rest after the operation, and the relief of mind that it is over. But sooner or later the disturbances return. The same applies to persons treated with Wilms's ecopexy; this does not go to the root of the matter and the clue to its discovery lies in palpation of the psoas.

79. **Alcohol and Criminality.**—Hentig is a lawyer and he reviews the statistics in regard to the crimes committed under the influence of alcohol during the last year in Bavaria, calling attention to the progressive increase and deploring the apathy and apparent helplessness of state and society in regard to it. On the other hand, he remarks, the leading men of science are constantly reiterating the dangers of abuse of alcohol.

80. **Between Colleagues.**—In this tenth installment of his "High School for Physicians and Patients," Nassauer relates that when Dr. M. entered the trolley car he found Dr. E. there, and the latter remarked that he was forced to take the cars as he had had to operate on his chauffeur for appendicitis, and he told of being due to operate at several different hospitals that day. Dr. M. remarked that the rushing from one to another takes lots of time and one gets into an unwholesome way of hurrying, speeding in the auto, operating in auto-time and weighing the pros and cons for operative treatment in auto-time, too. To Dr. E.'s reply that one has to lose his scruples and use his elbows to get along in the world, Dr. M. rejoined, "Ah, but patients must take time to get well. Nature must have time to heal the diseased body. The peasants in my country greet us with '*Zeit lassen*' as they pass. We must take time, dear colleague, or we will fall into Americanism. How much better it is to cure without an operation those who come to us expecting to be operated on. The public is becoming more enlightened and appreciating better the work of the medical profession. You will see that it won't be long before the fashion of getting operated on will go out of fashion."

To this Dr. E. replied, "The two weeks I spent in America this spring taught me lots of things. Above all they toughened my elbows. You have no idea of what goes on over there in the profession." Dr. M. smiled: "We Germans should be on our guard not to let this Americanism spread over here. Especially we physicians. What has earned for German science such respect the world around is the very fact that we have not degraded it into a business, with all the evil consequences inherent in business ideas. If we give this up, then the prestige of our German science will decline throughout the world and with it the standing of our profession. Besides this, it seems to me you have acquired an impression of the elbow tactics of the Americans which differs considerably from that of our American colleagues, who, so far as I know about them, are anxiously striving to maintain ideals like our own here in Germany in regard to the profession and the relations between its members."

Dr. M. is a skillful surgeon but he is less concerned about replacing an organ in its anatomic position than in curing the disturbances connected with the organ. If his patient was restored to permanent health with the organ slightly out of place he was better satisfied than to restore anatomic conditions with the patient left still ailing. He had encountered many such cases; the apparent benefit at first from the operation was soon followed by return of the old symptoms, showing that the root of the trouble had not been reached, and he had devised instruments to aid in conservative repair. One of them had found world-wide acceptance and had brought him much honor. On his way home that day he dropped into a physicians' supply-house and saw there that a trifling modification of this instrument had enabled the Dr. E. with whom he had just been talking to secure a patent on it. The instrument itself, the description, the circular with indications for its use—all were his own, his very words, but all were blazoned with E.'s name and no mention of the real designer and author's name. Nassauer gives M.'s soliloquy: ". . . Americanismus in German medicine, alas!" . . . "We have outgrown the word 'colleague' . . ."

Therapeutische Monatshefte, Berlin

November, XXVII, No. 11, pp. 757-824

81 *Behring's Method of Vaccination against Diphtheria. Hornemann.
82 *Radiotherapy in Gynecology. (Verwendung der strahlenden Energie in der Gynäkologie.) P. Haendly.
83 Radiotherapy in Dermatology. (Verwendung von Mesothorium und von Thorium-X in der Dermatologie.) O. E. Nägeli and M. Jessner.
84 Action of Bromids versus Effects of Salt Deficit. (Funktionelle Unterscheidung von Bromidwirkung und Chloriddefizit.) H. Januschke.
85 *Reply to Wells and Hedenburg's Studies on the Biochemistry and Chemotherapy of Tuberculosis. O. Loeb.
86 *Objectionable Way in which Certain Proprietary Is Advertised. (Ein falsches Inserat über "Alypin.") F. Bruck.

81. **Vaccination against Diphtheria.**—This article describes von Behring's method of vaccination against diphtheria based on the recognition of the fact that there is no neutralization of the diphtheria toxin possible in the test-tube, definite and irreversible. The experience with the method is still limited, but theoretically, Hornemann says, it seems to be promising.

82. **Radiotherapy in Gynecology.**—Hendly states that all hemorrhage was arrested in 92.5 per cent. of the cases of bleeding myoma in his service in which Roentgen therapy has been applied in the last three years. The treatment is not used when there is suspicion of cancer or recent disease in the adnexa. Climacteric hemorrhage was arrested in 94 per cent. of the cases; menorrhagia without local findings in young women, and chronic metritis were cured in every instance. Essential pruritus also responded favorably in one or a few sittings with low dosage. Combined radiotherapy has its special field in malignant disease, and it is already established that the method has a destructive action on cancer but whether it roots it out completely time alone will tell.

85. **Biochemistry and Chemotherapy of Tuberculosis.**—Loeb replies to Wells and Hedenburg's article on this subject, claiming that their statements are based on defective premises.

86. **Misleading Advertisement of Alypin.**—Bruck called attention four years ago to the misleading statements in the advertising of alypin. Both an anesthetic and blood-expelling action are claimed for it but in reality it has none of the latter. It is also stated that alypin is considerably less toxic than cocain, while Schröder and others have found that it is fully as toxic as cocain and the last supplement to the German Pharmacopeia gives the maximum dose the same for both alypin and cocain.

Wiener klinische Wochenschrift, Vienna

November 6, XXVI, No. 45, pp. 1833-1880

87 Course of Destruction of the Blood in Pyrodin Anemia. (Ablauf der Blutzerstörung bei der Pyrodinanaemie.) L. Hess and H. Müller.
88 Modification in Skin Reaction. (Veränderungen der Hautreaktion.) F. Luithlen.
89 Influencing of Tuberculin Reactions by Serum. J. Sorgo.
90 Radium Treatment of Uterine Cancer. H. Keitler.
91 The Abderhalden Pregnancy Reaction. P. Werner and A. F. v. Winiwarter.
92 Peroral Intubation in Upper Air Passages and Esophagus. F. Schlemmer.
93 Study of Disappearing Scarlet Fever Eruption. (Die Abblassungserscheinungen des Scharlachexanthems in ihrer weiterreichenden Bedeutung.) O. Kirsch.

Zentralblatt für Chirurgie, Leipsic

November 15, XL, No. 46, pp. 1769-1808

94 *Cholera and Typhoid Gangrene. (Die symmetrische Gangrän im Balkankriege kein Frostschaden.) A. Welcker.
95 To Remove Discoloration Left by Iodin Sterilization. Heinemann.

94. **Symmetrical Gangrene in Soldiers in Balkan War.**—Welcker here gives illustrations of some of the cases mentioned in his previous article summarized in these columns, page 1943. He also points out the differences between the features of this gangrene developing mostly in the hospitals after cholera and typhoid and the gangrene that develops after freezing.

Policlinico, Rome

November 9, XX, No. 45, pp. 1621-1656

96 Ether Anesthesia. G. Nannini.

November, Medical Section No. 11, pp. 481-528

97 *Experimental Research on Vaccination of Man against Typhoid. R. Bosisio.
98 *Intercurrent Typhoid or Antityphoid Vaccination in Chronic Lymphatic Leukemia. C. Moreschi.

97. **Vaccination against Typhoid.**—Bosisio has been making comparative series of tests with the subcutaneous and the intravenous technic for vaccination against typhoid. He prepared the vaccine by Löffler's method regarding this as superior to others for several reasons, among them the durability of the vaccine thus made and the fact that only one injection is needed and that the immunization is complete in less than a week and lasts a year at least. The intravenous route is preferable as the effect is felt more promptly and more antibodies are produced by this technic. The details of the vaccination, the effect on the temperature, blood-count, etc., are tabulated from fifteen typical cases.

98. **Typhoid in the Course of Leukemia.**—Moreschi reports the detailed findings in the case of a man of 58 with intermittent typhoid in the course of lymphatic leukemia, and reports further the effect of antityphoid vaccination in eight cases of leukemia. The leukocytes dropped the next day in one case from 157,000 to 85,000 but soon ran up again nearly to the former figure. In the other seven cases they sank merely from 164,000 to 104,000, 219,000 to 109,000, 281,000 to 27,000, 160,000 to 74,000 and from 700,000 to 530,000. Various details are tabulated, as also the findings in nine patients with various other diseases given the antityphoid inoculation. In all these experiences there was no agglutination either in the typhoid fever or after the vaccination in the leukemics, and there was no temperature reaction to the vaccination. Only one of the leukemics, a child of 8, showed agglutination at 1 to 10 or 20. The parallel absence of both antibodies and fever is significant, confirming the assumption of a close connection between fever and antibody production. In the two healthy persons vaccinated there was a slight febrile reaction and slight agglutinating tendency, while a pellagrin responded with a marked reaction in both, as also the arthritis and gastritis patients.

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99 *Hemolytic Splenomegaly. J. Lankhout.
100 *Anaphylaxis. E. Friedberger. Commenced in No. 14.

99. **Hemolytic Splenomegaly.**—Lankhout reports a case in a woman of 42 and comments on the confusion there is in naming this disease. What Banti described as hemolytic splenomegaly—the picture including jaundice, enlargement of the spleen, anemia, low opsonic index and morphological changes in the blood-picture—is merely a syndrome, he says, which was earlier described by Hayem, Widal and others. Splenectomy is of undoubted value in Banti's disease, in splenic pseudoleukemia and hemolytic splenomegaly and even in pernicious anemia. The research of Pugliese and Luzzatti on the functioning of the spleen showed that splenectomized dogs can endure twice the amount of pyridin that the normal dog can stand. Pyridin has a destructive action on the blood, but in the splenectomized dogs this does not go beyond a certain limit, while the destruction proceeds indefinitely in the non-operated animals. They observed that a small dose of pyridin causes albumin, blood and bile pigments to appear in the urine, but this does not occur in the spleenless animal. They explain this difference as follows: In the non-operated animal the blood pigment which is formed under the influence of a hemolytic poison, is deposited in the spleen and from thence it is carried to the liver. The liver cell responds to this with increased functioning. If the spleen has been removed, the blood pigment deposits itself in the marrow, thus over a larger area; and so the pigment can only reach the liver-cell by way of the general circulation and when it arrives at the liver it is much diluted. In the splenectomized animal it reaches the liver by the hepatic artery and in the normal animal by the portal vein. These experiments on dogs shed some light on what takes place in human pathology and on the value of splenectomy when the blood is suffering from toxic influences. (Compare with Pearce's communication on page 2087.)

100. **Anaphylaxis.**—In this article many definitions and explanations are given of the various terms employed in the phenomena of anaphylaxis, with a historical sketch of the subject, down to the awarding of the Nobel prize this year to Richet. Friedberger continues his review as follows:

What must be done to protect against anaphylaxis? It seems to be proportional in severity to the amount of serum injected, and therefore a concentrated serum should be used, permitting small dosage. Old serum is less dangerous than new, and heating it to 60 C. seems to have a tendency to reduce its toxic action. Ascoli advises to inject sheep serum for prophylactic purposes, reserving horse serum for use later. Netter advises calcium chlorid in doses of 0.1 to 1 gm. for three days. Bligh prefers calcium lactate for the purpose. In experiments with animals, Biedl and Kraus used barium chlorid and Auer atropin with good effect.

The safest method to prevent serum sickness is the method of anti-anaphylaxis devised by Besredka. By giving a small hypodermic injection of serum, the antibodies become fixed without forming a dangerous amount of anaphylatoxin; the now desensitized individual can endure a large dose of serum administered drop by drop.

An idiosyncrasy for certain foods is a form of anaphylaxis. Rosenau and Anderson have fed guinea-pigs with albuminous foods until they became sensitized to injection of albumin. We must accept that by feeding these foods many antibodies are formed. Moro calls this a "constitutional hypersensitiveness." The same condition is found in some children on a cow-milk diet; it is also noticed in hay-fever, and it may be the case in eclampsia. This theory also explains the toxic symptoms following the opening of echinococcus cysts.

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101 Aneurysm of the Innominate Artery. S. and J. Nordentoft.
102 *Tumor of the Parotid Gland. T. Iversen. Commenced in No. 45.

102. **Tumor of Parotid Gland.**—In one of the three cases reported the solid tumor in an accessory parotid gland was accompanied by a suspicious ulceration on the scalp, which the patient referred to a trauma a year before. The suspicion of a syphilitic origin for both was confirmed by the prompt improvement under potassium iodid. In the two other cases the enlargement of the gland came and went. Cases of this recurrent swelling of the salivary glands have already been published, and some ascribe the affection to nervous influences. This seems a plausible explanation in one of Iversen's cases as the boy showed signs of degeneracy; the gland enlargement developed during school time and the boy was sent home each time. He had a habit of repeatedly contracting the masseter muscles, and possibly by this means he caused temporary occlusion of the outlet duct, thus enlarging the gland by the retained saliva. This explanation does not apply to the other case of recurring swelling of the parotid gland and to others like it in the literature. The trouble seems to be here of an inflammatory nature. Only transient improvement to date has followed catheterization and direct medication of the gland; it swelled anew each time after a certain interval, and a more radical operation is now contemplated in Iversen's case.